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UPON THE PATHOLOGY OF MILKSICKNESS.

A THESIS, BY GEO. WHEELER JONES,

FOR THE DEGREE OF DOCTOR IN MEDICINE. MEDICAL DEPARTMENT OF LIND UNIVERSITY. SESSION 1861-2.

GENTLEMEN:—Had it fallen to my lot to write this article but a comparatively short time since, I should certainly have apologized for so doing, as the disease of which I treat was then unclassified, and by some pronounced unknown. It has always been considered a wonderful mystery by the laity, and the opprobria medicinæ of the Western physician; and will continue to be so, until the profession advances to the examination with unbiased minds, and spirits willing to examine the case in all its bearings, and give to *truth* and *facts* their full value. Such has been my effort; and having for several years resided in a "Milksick region"; having had the subject often brought before my mind, I have endeavored to divest it of its shadows, its ogres, and its phantasms—to draw it into the clear light of science, and there analyze it carefully, with reason as my assistant and guide. And here, standing in the outer court of the Æsculapium, with an eager desire to penetrate its "holy of holies," I tender, as my sesame, the result of my thoughts and observations upon this strange disorder, hoping the doors may unfold, and I be received a worthy follower of Chiron's ghost.

The early history of "Milksickness" is involved in much obscurity. I have been unable to find any account of the disease previous to the writings of Dr. DRAKE, and his contemporaries. It—the disease—is found in a "belt of country comprising Ohio, Indiana, and Illinois," and extending into Kentucky and Tennessee. There are also spots in Alabama where it is said to exist. I believe it is unknown West of the Mississippi, North of the great Lakes, and East of the Alleghany range. To Dr. DRAKE is due the honor of having first brought this subject fully before the profession; and although many years have passed since then, its pathology is still, to the mass of the profession, involved in deepest darkness and doubt. Why this is so, may readily be seen, if one will take the trouble to peruse the mass of literature perpetrated on its account. Views as different as light from darkness; weighty conclusions from equally weighty arguments; facts and truths distorted and disfigured until their farther recognition is impossible; strange ideas and wonderful discoveries, all have been inflicted upon a patient, loving, and attentive profession, "until forbearance ceases to be a virtue," and here to the brimmer I will add one more drop.

During the early writings of DRAKE, those who recognized the complaint were divided into two principle factions as to its primary cause; DRAKE and his followers maintaining it was vegetable; his opponents, that it was mineral. The former strongly suspecting the rhus toxicodendron; the latter, arsenic, cobalt, and sulphur. Since then, these two have been divided into four theories, viz.: vegetable, mineral, animal, and malarial. The advocates of the vegetable cause have each found a plant, which he is certain is *the* one. Amongst those suspected are the eupatorium ageratoides, (white snake root,) bignona capreolata, (catalpa,) rhus tox. (poison oak,) rh. radicans, (poison vine,) apocynum cannabinum, (Indian hemp,) and a vegetable fungus, christened by Prof. SLACK, who claims its discovery, ergodeleteria; the last of which was recently largely experimented upon by Dr. NAGLE, a Southerner, who contributed a valuable paper upon the disease in question to the *Nashville Journal*, wherein he ably advocated the claims of the fungi, and

supported his views by arguments and conclusions drawn from actual experiment,—which is more than others can maintain. There has also an article recently appeared, in which the claims of cicuta virosa (water hemlock,) are advocated. But there is *no* vegetable, amongst the many named, which has been able to bear the scrutiny of extended examination; not one but that is found growing largely in regions entirely freed from the curse of our disease,—very few but of which cattle may and do eat with impunity. And with such strong negative proof against this theory, I do not think we are justified in upholding it, as it really prevents a calm and careful examination of other views. The same too may be said of the mineral cause; no one of this class of substances, with which we are acquainted, affects the system as does the subtile poison of Milksickness. In the mining regions of Bohemia and Saxony, where cobalt and arsenic occur in great abundance, the disease is unknown; in the sulphurous atmosphere of Solfatara, Sicily, and the Roman States, no Milksickness is found; in the iron producing countries of the globe, no such complaint is known; in short, no mineral can be found which produces a like disorder. The animal theory is most unworthy of them all, for it does not go even to the surface of the subject. If the complaint is caused by eating animal food, what gave it to the animal? It is not a secondary cause for which we seek, that we know well enough; it is the great primary cause which now occupies the mind.

"Can it be of malarial or miasmatic origin?" I not only think it can, but that it is; and will try to advance a few reasons for my belief. I conceive the cause of this disease to be a peculiar miasm, generated under peculiar circumstances. It may be an animal sporule; a vegetable atmospheric fungus; or a gas formed by a particular combination of the elements; that it is one of these three I am confident; but which one, is at present beyond the power of man to determine; although our evidence leans most powerfully toward the first two. We generally, I may say invariably, find Milksickness in or near a notoriously miasmatic district. Northeast of the place in which I reside, the country is low, wet, and might almost be called

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marshy. North and Southeast it is high and rolling, but very much cut up by transient water courses. The land in all these places is covered with a thick growth of forest trees and underbrush; and in all these spots we have much malarious fevers; and the latter, I am confident, will be found to be the case in all Milksick regions.

During the last fall, 1861, this complaint has been quite marked in that and adjoining counties. The weather was such as we usually have at that season, and such as will generally give rise to miasmatic disorders, with which we had the Milksickness complicated; its most common accompaniment this season was remittent fever. I do not wish it understood here that I advocate the theory that Milksickness is a grade of intermittent or congestive fever; but this I do maintain, that the causes which generate common miasm, will, under certain peculiar circumstances, be totally and thoroughly changed in their combination, producing another substance which will in turn give rise to a totally distinct disease from the one previously rife. How often do we see this in other complaints? Variola and scarlatina will rage in the same district. Yellow fever and cholera will stalk throughout the land side by side,—and as each finds a being peculiarly predisposed to its own special action, on him will fall the blow. Still no one will say that these are each produced by the same cause, nor that they are different grades of the same disease. Each may be caused by an atmospheric fungus, an animal sporule, or a gaseous vapor; but these causes are generated under different conditions of nature's laws, and each produces its own distinct legitimate effects, and these effects are only seen where the conditions of the organic changes in air and earth are such as to favor the propagation of their cause; and where the changes are such as occur in many districts of the West and South, there we see produced the peculiar disease known as Milksickness; while in the neighborhood, nay in the same family, we see the usual fevers of malaria. I give the preference to the animal or vegetable nature of this cause, from the fact that the disease is a self-propagating one, and to some degree contagious, which

strongly indicates a cause which will and does generate itself from itself; and we can hardly imagine such a case, without calling to our assistance those laws of nature which are intimately associated with the mysteries of organic life, and there the fact, that it is and must be a microscopic animal, a microscopic fungus, or an organic cell germ, breaks forcibly through the mind, and sheds upon the gloom-shrouded spirit a beam of hope-inspiring light, guiding our steps nearer and nearer to the great truth, which, God grant, we may all soon reach.

I have said this disease is contageous; for the proof of which I give the following facts, viz.: In perhaps seven-eights of the cases which occur in man, the disease can be clearly traced to the eating of the flesh, milk, or butter of an animal which has died of or is sick with the complaint; and in all such cases the same disease is produced, which plainly shows its power of self-propagation; were such not the case, the disease which would *generally* be produced, were any caused at all, by consuming the diseased and unwholesome food, would be a grade of typhoid, typhus, or scrofula; but where it is *invariably* the same disorder with which the animal furnishing the food is afflicted, can we come to any other conclusion than that the disease is of a contageous nature? And what is true of its effects upon man, are the same in regard to the carnivora; as dogs, cats, buzzards, &c.

Again, human beings have been known to contract the complaint in its worst form, after having been engaged in flaying the diseased and dead but yet warm animal, and after having abstained entirely from the use of food by which it could be contracted. The same might be said of animals; but as the proof that they have not eaten the meat can not be conclusive, it would not be a fair example. With such a fact before us, and the vouchers are satisfactory, can we deny that the cause consists of a peculiar germ, which taken into the system, either through the lungs or stomach, there propagates itself until the whole being is contaminated; and without prompt assistance, the poor sufferer quickly glides down the hill of life, and sinks into the dark abyss of eternity. That the cause is of short life is also true; since before it can rise to the height at which man usually

breathes, or ere it can travel to a sufficient distance from its origin to reach the system of man, its pernicious influence is destroyed, and its germs dying before they can find a fit place for propagation, are thus rendered inert. That man has taken the disease from the atmosphere is a fact too strongly verified to be disputed, still such cases are not common; but the human race generally receive the disease from a secondary source—the bodies of the diseased animals; which animals, from their mode of life and manner of procuring sustenance, bring their organs of respiration in immediate contact with the live germs of the disease, and with every inspiration of life incorporate with their systems the seeds of death, which, finding a congenial home in their new abode, rapidly accumulate, and weave around their victim the web of disease and death.

I hope, Gentlemen, I have clearly expressed my views as to the cause of this complaint; and will now turn to its nature and anatomical characteristics. What we know of the latter amounts to very little, and gives but a scanty assistance in our search for its first cause. Several post mortem examinations have been made; but little of importance or interest has been discovered. The chief changes were in the stomach, which has generally been found somewhat injected and contracted, especially at the pyloric extremity; which in many instances was permanently and almost totally closed. The lower portion of the intestines have also, generally, an abnormal redness; which may be accounted for by the irritation of the hardened fœces. The injection of the stomach and upper bowels is undoubtedly caused by the violent retching which accompanies the complaint. The contents of the bowels are in a hardened condition, almost entirely devoid of moisture. There is also "an almost complete absence of gas." In animals, the partly digested food in the stomach is formed in "round hard balls" of various sizes, "and the fœces in the large bowels are so dry as that they readily crumble into powder upon the application of slight force." There are also the usual appearances of lesions, and inflammation in the various organs, when these have occurred during the course of the disease. The great difficulties in the way of

procuring post mortems, in the sections of country where the disease occurs, the insurmountable prejudice which the people show against such a proceeding, has rendered it difficult and almost impossible to advance our knowledge in this respect. Still, what has been done goes a great way, and is ample evidence of the non-local nature of the complaint. That it is a disease sui generis, I cannot conceive how one acquainted with the disorder, can deny. Its symptoms, its course, and its characteristics all proclaim it a disease in its self. By a great majority of those who are acquainted with its symptoms and course, from practical observation, it is regarded as a disease of the blood; for, as Dr. BYFORD aptly remarks, "Is there any disease but a blood disease that emits a peculiar odor?" And this odor, of which I shall speak again, is one of the principal characteristics of the complaint—having been once perceived is never confounded with any other—many practitioners indeed relying upon it as their great diagnostic sign. I can easily conceive how the blood may become poisoned, degraded, and perverted in its properties—how in this condition, by its pernicious influence upon the great centre of life, it spreads a destroying influence upon all the functions of body, the nervous, the secretory, and muscular in chief. And our knowledge of its course supports this view; but the elementary properties are much perverted, if not decidedly diminished; the brain is disordered in almost all grades of action, from simple irregularities to profound coma; the secretory function in all parts of the system is arrested; the spinal cord is affected as betokened by the persevering backache; the muscles are weakened, and the whole animal economy degraded in its various offices; every thing tends to prove the action of a powerful sedative influence upon the system, which influence springs from the demoralized and degraded condition of the blood,—the great source, in health, of life and activity in all the organs. Some may ask, at this point, why then is the action of the stomach so greatly increased? I would ask in return, is the exhibition which this organ displays of its powers a natural action? Most assuredly not. Its natural action is the secretion of the gastic juice, a peculiar mucus,

and that function known as absorption. The gastric follicles are dormant in this affection, while the mucous secretion is more abundant, evidently for the purpose of protecting the organ from the effects of the acrid matter, which most probably finds its way there by exmotic action, although it may indeed be produced by a perverted action of the gastric glands; so may the other matter, which I call mucus; but it is generally considered a true mucus formed by the mucous follicles. Can we come to any other conclusion, with this knowledge, than that the blood is deeply poisoned, and in its continued action is carrying destruction to all the body? While nature, becoming aroused to her danger, puts forth her powers to eliminate the cause of death; but the usual portals of excretion are closed, and her unaided efforts are powerless to force the passage; and now, as danger comes nearer, she turns as a last resort to the stomach, perverts its action, drives through its walls the seeds of destruction, which, by their unwonted presence, cause it to call for muscular power to expel the intruding substance,—the weakened nerves, by a mighty effort, respond to the call, arousing the proper muscles for the labor on hand, and boldly undertake its performance; but, in the great majority of cases, too late to effect its end; and unless assistance from the external world is obtained, nature sinks in despair, and death conquers his victim. But I must hasten in my remarks, as time and space are both limited.

In describing the symptoms and treatment, I shall adopt the plan of dividing the disease into three separate grades or varieties, viz.: simple, inflammatory, and congestive. The symptoms of the first being as follows: a strange feeling of languor, and decided aversion to all exercise, both of mind and body, mark its first onset; this is speedily followed by a want of tonicity throughout the entire system, but is specially exhibited in the stomach and voluntary muscles; there is a want of appetite, but at the same time some nausea if food is withheld beyond the usual time; torpidity of the bowels; palpitation of the heart; depressed pulse, but not much irregularity in beat; cool, pale, and shrivelled skin; stiffness of joints; trembling of limbs;

shortness of breath; craving for ardent spirits; vomiting after exertion; oppression of epigastrium; general restlessness, and at night absence of healthy slumber; "sometimes, however, the patient is dull, stupid, and indifferent to surrounding circumstances." These symptoms mark the first appearance of the disease, and may continue for days, or weeks, or months, before the complaint manifests itself in a decided manner; and where proper hygienic rules are observed, and attention paid to the general health, it often stops at this point, and the patient is restored to health without the disease advancing to its more serious grades. But if the above measures are neglected it will sooner or later take upon itself a more active form; and this change is usually preceded by some exciting cause, as fasting, long fatigue, obstinate constipation, or over-exertion. The complaint then presents the following characters: the patient is "seized suddenly with nausea, faintness, and prostration;" violent emesis quickly supervenes, accompanied with urgent thirst and longing for alcoholic drinks and iced water; the vomiting generally occurs at regular intervals, and ends with the ejection of the entire contents of the stomach, which is at first composed of whatsoever the patient may have swallowed during the interval; but as the case advances the character of the ejected matter changes, and is now composed of a "glairy tenacious mucus, very acrid and sour;" and then this mucus mixed with a dark "coffee ground matter," or this dark fluid alone; when this mixture is allowed to stand it separates into a colored solid substance, and a "collection of coagula;" the colored matter effervescing with bicarb. sodæ. In the latter stages of violent cases it closely resembles the matter of black vomit. A dirty white coat covers the tongue, which is loose and flabby; the surface of the body is cool, and is now quite full, and of a leaden color, the capillary and cutaneous vessels being in a state of engorgement; the patient is dull and stupid during the intervals of vomiting; the respiration is slow, embarrassed, and accompanied by a peculiar sighing; the pulse is full, slow, and soft; the heart throbs violently, which action is generally extended to the larger arteries, and indeed may be seen and felt in the aorta,

from the epigastrium to its division, on account of the hard and retracted condition of the abdominal walls; there is an anxious contracted countenance, excessive prostration, loathing of food, a burning sensation in the stomach, a feeling of weight and tenderness at the epigastrium, and most obstinate constipation, or where discharges occur spontaneously, they are dry, scanty, generally in hardened fetid balls, and difficult of extrusion; the secretion of the kidneys is scanty, as is also that of the other secretory organs; the patient feels dejected and despondent. And now for the great diagnostic sign of the disease: it is a peculiar odor which arises from the breath, skin, urine, and all the excretions of the body. Upon first perceiving it in the breath, one might suppose his patient was badly salivated, as it partakes much of the character of the odor from ptyalism; still there is a peculiarity about it which one acquainted with the disease will never mistake. Dr. BYFORD has most aptly and successfully hit upon the following comparison: "It resembles almost exactly a strong odor of chloroform, mingled with the smell of animal secretions; say a smell of chloroform and the breath of a patient salivated, and we would have it almost precisely." This odor proceeds principally from the mouth and lungs, and is so disgusting as to make it very disagreeable to be in the same room with the patient; and is so strong as sometimes to be perceived at some distance from the patient's room, and even from the house. Many physicians rely upon it as their almost sole diagnostic sign, and experienced practitioners will know the medicines they will use ere they enter the house. The odor may be perceived in all stages of the disease, but becomes especially marked and powerful as the complaint advances in its course. Should no relief be obtained now, the symptoms I have enumerated above gradually becomes worse; there arises a sense of emptiness in the chest, which the sufferer, with all his efforts—and they are unremitting—is unable to relieve. The efforts at emesis increase, and the matter thrown up becomes darker as the complaint advances; the surface is cold; the breathing slow and irregular; the pulse grows smaller, more rapid, and at last fails, often some hours before death; coma

gradually supervenes, and death closes the scene. In other cases, after some days from the commencement, the bowels may act spontaneously, or be moved by a cathartic, when the abdomen becomes swollen, hot, tympanitic, and painful; either watery discharges occur, streaked with blood and mucous floculi, or the passages are hard and fetid; the tongue is coated with a dark fur, and is dry, red, and cracked. Sorded teeth, congested fauces, difficult deglutition, small, quick, weak pulse, cool extremities, retained urine, and coma; the patient generally lying upon his back, with the knees drawn up; death "gradually steals upon him," being immediately preceded by those signs which mark a total prostration of the system, as from a narcotic poison. If the case ends favorably,—after having obtained a few discharges from the bowels, the vomiting becomes less frequent, the sense of burning and weight in the stomach are relieved, the nausea subsides, tongue cleans, appetite improves, and all the symptoms gradually pass away, leaving the patient to a slow convalescence, often accompanied by the promonitory symptoms. Occasionally the convalescence is rapid, and good health is regained in a few days, but, unfortunately, this seldom occurs.

The foregoing is a description of the simple form. The other two varieties are both rare and dangerous, and appear as follows: The inflammatory, as might be supposed, is more fatal than the simple, less so than the congestive variety. It is marked by high arterial excitement; severe headache; the surface of the body is hot, the face flushed, and often active delirium; full, hard, quick pulse; stomach and bowels tender on pressure. It often ends in inflammation of stomach and bowels, and may be complicated with the diseases prevailing at the time in the neighborhood, which complaints often act as an exciting cause. The congestive variety is the most rare and most fatal of the three, equalling in mortality the most dangerous of the various congestive fevers of the West. It is supposed, on good authority, that the disorder commonly assumed this form in the country's early history, as Milksickness was then considered one of our most fatal diseases. After the symptoms of the

premonitory stage have continued for a longer or shorter period, a sense of impending suffocation, and intense vomiting and retching set in, accompanied by insatiable thirst, anxiety, cold extremities, small, weak, frequent pulse; glassy appearance of the eyes, abundant watery perspiration, jactitation, prostration, restlessness, suppressed urine, and delirium. These signs mark the form of the disease. Sometimes coma comes on without change of pulse, with full capillary vessels, and thus ushers the patient into the presence of death. The peculiar odor, and other characteristic symptoms, show the nature of the complaint. This variety attacks all grades of constitutions, but, excepting where the cause is intense, prefers the weak and debilitated. The diagnosis of this complaint is, to the experienced physician, comparatively easy and simple. If the peculiar odor proceeding from the patient, the obstinate constipation, dry scybalous fœces, the emesis and matter ejected, the peculiar respiration, craving for ardent spirits, and previous history of the case be properly considered, there need be no mistake in drawing a correct conclusion. And as the reputation of many a good physician has been sacrificed at the side of a Milksick patient, it would be well for one practicing in such a district to make himself as thoroughly acquainted with the disease as possible before he meets it. Our success in practice depends upon the good opinion of the *mass* of the people where we may locate, and the opinion of such a mass is changed by the slightest circumstance which points to our ignorance, though it may arise merely from hesitation or embarrassment, neither of which must be observed by our patrons.

Many diseases resemble this in *some* respects, but the peculiar characteristics enumerated above will enable us to distinguish it from all others. The prognosis varies with the variety of the disease In the simple form it may always be favorable; the patient often recovering without much treatment, always where proper measures are resorted to. Upon the occurrence of inflammatory symptoms, more care must be exercised in expressing an opinion; we may indeed generally pronounce the case doubtful. Where the congestive form arises our prognosis

should always be favorable; for though by active and proper measures we may save the patient, the chances are as more than ten to one against us. When death occurs, in the congestive variety, it takes place in from a few hours to three days from the commencement of the attack; in the other forms, from two or three days to two weeks intervene between the attack and the close of the conflict.

The treatment is plain, simple, but active. After the stomach is quieted, the bowels moved, and secretions restored, little is to be done, aside from attention to the general health. For restoring the stomach to quietude, we must rely mainly upon blisters and sinapisms to the epigastrium, and friction with oil of turpentine on the spinal column, combined with small pellets of ice taken internally. Many practitioners have immediate recourse to opium and its preparations, but in consequence of its strong constipation tendencies, and inclination to check the secretions, I would not recommend its use, as we have other remedies quite as potent and less injurious. Some of the aromatic mixtures may be useful, especially if combined in some proportion with brandy; or brandy or whiskey alone may be used; although where other remedies will succeed it is better not to meddle with spiritous liquors, especially in the large quantities recommended by some, as many of the genus homo are possessed of comparatively short reasoning powers, and consequently conclude that whiskey saved their lives—therefore it is a "bully thing," and having once taken hold of their affections, draws them from every other object, and finally lands the subject in the grave. The effervescing draft is a very efficacious remedy under the circumstances, and combined with sweet spirits of nitre, is perhaps excelled by no other, and in its use three indications are fulfilled at once: the stomach is calmed, diaphoresis is produced, and the kidneys aroused to action; also some effect is often induced upon the intestines. Where the vomiting still continues obstinate, and nausea is excessive, recourse may be had to creosote with every hope of success. The late Dr. TRAFTON used yeast, in this stage, with great success, and attributed to it peculiar curative powers in this com-

plaint. Where one of these remedies fails we must turn to another, until we find one to answer our purpose, which we almost certainly will amongst the many in use. But we must not wait for the gastric irritation to subside before we attempt to move the bowels, or we will certainly see our patient soon out of reach. As soon as the first attack of vomiting, after we see the case, subsides, the patient should take a small dose of calomel and jalap, say two grains of each, repeated every hour, or calomel 2 gr., ipecac ¼ gr., same way until eight or ten doses have been taken; when it may be changed for a seidlitz powder combined with one drachm sulph. magnesia, given as frequently, until an operation is produced, or the delay becomes dangerous. The calomel is useful, not only in arousing the torpid liver, but in quieting the stomach, and producing a general alterative effect upon the various secretory functions; but great care should be taken that it is not carried to excess and ptyalism produced. The jalap will aid it much in its cathartic properties, and will restore the dry, irritating fœces to a fluid condition; where ipecac is used instead, in very small doses, it gives tone to the stomach, and assists much in quieting that organ, at the same time having a diaphoretic tendency. When there is an objection to the calomel at first, other cathartics may be used until the tube is opened, when one or two full doses of the submur. or pill. hy-drarg., with salts or oil at a proper interval, should certainly be given, as the liver will properly act under no other remedy, unless I except the podophyllin, which needs further trial. Cream tartar and syrup sennæ, epsom salts, or any other good purgative may be given, a full dose every hour until some effect is produced; it would be well to change from one to another, as being more agreeable to the patient, and often a combination of different remedies, or a change from one to another will produce a more speedy effect. The best time to give medicine is immediately after the ejection of the contents of the stomach; as before it can be aroused to another action, some of the medicine will be absorbed; however little that may be "every little helps," and we will finally see the good results of perseverence. Along with the remedies above proposed,

small doses of nit. potassa, or spirits nitre, may be given at intervals of one or two hours. I give this for its tendency to the skin and kidneys. But our great effort must be to obtain a downward passage through the alimentary canal, and that should be accomplished within twenty-four hours; before that time we need labor under no anxiety, unless the symptoms become much worse. As soon as we perceive a peristaltic action induced, which may be known by the improved appearance of the abdominal walls, borborygma, and feelings of the patient, and will occur in from twelve to eighteen hours, it will expedite matters much to administer an injection composed of a solution of sulph. magnesia in warm water, or castor oil floating in water; and if a strong impression is desired, a little ol. terebinthinæ may be added, but as a general thing it is too drastic, and the others answer the purpose well. The first evacuations will be dark and fetid and tarry in consistence, where injections have not been used; where they have they will be thinner, but most disgusting to sight and smell.

Where difficulty is experienced in moving the bowels, we must resort to stronger measures; and here the two great remedies are croton oil and elaterium; the former may be administered according to Dr. BACON'S plan, which is at once ingenious and effectual: a drop of oil is deposited in the centre of a large bolus of the pil. hydrarg., so large as by its weight and size to prevent its ejection; this may be repeated in an hour if no effect has been produced. The elaterium is a powerful remedy, and in small repeated doses will not disappoint our trust, although from the slight intestinal irritation it is rather contraindicated. Podophyllin is also an excellent purgative, possessing also some alterative properties, and should receive a trial. After the constipation has been overcome by a free fœcal discharge, the patient quickly improves in feelings and appearance; the nausea subsides, the skin becomes clearer, the tongue cleans, and the general functions of the system enter again upon a discharge of duty.

Now our attention must be mainly directed to the general health. In order to obviate the tendency to constipation which

remains, we must resort daily to laxatives and apperients; amongst the many are rhubarb, magnesia, aloes, etc.; a good combination is one mentioned by Dr. BYFORD, viz.: rhubarb, aloes, and capsicum, equal parts, and made into a pill. Another excellent preparation is a powder composed of one part bi-tartrate potassa, and two parts of sulphur; sulphur indeed seems to possess a very potent influence over the disease itself, acting as a decided eliminative. Should the stomach lack tone, and the appetite be poor, we may employ quinine, the chalybeates, or bitter infusions; quinia in full doses, after the disease is crushed, may be employed with advantage, and when the patient comes fully under the influence keep him there some days. By this treatment, with plain nutritious diet, the patient, in a shorter or longer time, varying from a few days to three or four weeks, becomes quite convalescent and enjoys good health; where the disease returns or continues obstinate, some vital point in the treatment has been omitted. Sometimes after the first fœcal evacuations are obtained, the stomach continues irritable, the epigastrium and abdominal regions are tender, the latter tumefied, and the discharges from the bowels become frequent and watery; here we have to fear intestinal inflammation, and should endeavor to counteract it by a sinapism to the stomach, cooling mucilaginous drinks, pellets of ice, and injections which while being laxative should also be soothing and emollient. Where great debility and prostration ensue, resort must be had to stimulants, as carb. ammonia, with hot flannels, and frictions or rubefacients to the extremities; spirituous liquors may here become necessary, but as I remarked above, use them with caution, and as little as possible. Blood may be drawn if the case is inflammatory, the indications call for it, and the patient is plethoric; but as a general rule the system will not endure it, and as much strength as possible should be saved for the convalescence; veratrum viride answers the full purpose of venesection, with none of its objections, and should the stomach not be able to retain it, I should not hesitate, the febrile action being high, to administer it per anum.

In the congestive variety, our treatment must be prompt,

thorough, and active; large injections of warm water, or in very prostrate cases, water containing ol. terebinth., or brandy should be immediately thrown into the colon; at the same time sinapisms, or friction with hot oil of turpentine, should be applied to the spine and extremities; bottles of hot water, hot cloths, bricks, or irons may be used; cloths wrung out of hot water are very useful; a good and quickly prepared rubefacient is a sack or bag containing common salt and made quite hot; this may be applied to the limbs and body of the patient with great advantage; carb. ammonia, warm brandy or whiskey will be useful, per orem; where the head is warm ice should be applied to it; if the body is in the same condition, apply to it cloths wrung out of cold water, keeping the parts constantly cool, and omitting the remedies per orem as their effect may be injurious. Palliatives, such as lime water, soda water, lemonade, chalk, etc. may be used during the course of the disease, if not contraindicated, as they are generally very grateful to the patient; large draughts of cold water should be forbidden throughout the treatment, especially at the beginning, as they never fail to increase the vomiting; if there is excessive thirst, give rather the warm herb infusions, as the catnip, pennyroyal, or mint teas; or what is better still, infusion of cimicifuga rac. or wild cherry bark.

I have endeavored, gentlemen, to give as full and complete an account of this disease as "in me lies." If I have but partly succeeded in stating the *whole* case, still I must be content, hoping ere another student writes Milksick for his thesis, the profession will give him more solid ground upon which to work, especially in its ætiology.

LITHOTRITY PERFORMED ON KING LEOPOLD.—M. CIVIALE has lately performed lithotrity on King Leopold of Belgium. The calculus was small, and was crushed successfully in two sittings. Some time since M. C. performed the some operation for King Bomba, for which he received a fee of 25,000 dollars.

ARTICLE XIV.

RETENTION OF URINE,

CAUSED BY A CALCULUS IN THE URETHRA, WITH REMARKS AS TO SOME OF THE MORE PROMINENT CAUSES OF VESICAL RETENTION IN THE YOUNG.

By SWAYNE WICKERSHAM, M.D.

Read before the Chicago Medical Society.

On the 18th of October, 1861, at 5 o'clock, P.M., I was called to South Dearborn Street, to see a child two years and nine months old. I was informed that forty-eight hours previously the boy had returned from a neighbor's, where he had been playing, apparently in good health and spirits. A few minutes after entering his parents' house, he uttered loud exclamations of pain and fell prostrate upon the floor. When he was resuscitated, he expressed a most urgent desire to micturate, but unable to void any urine. He was very restless throughout the night and suffered excruciating pain. The following morning, about seventeen hours after his first illness, a physician was summoned, who diagnosed suppression of the urine, and believed his case free from danger. He prescribed diuretics and antiphlogistics. The medicines were administered as ordered, until I saw him about thirty-one hours later. His symptoms were then significant of great danger. He was semi-comatose, could only be partially aroused, and if let alone his dulness would immediately return. His respiration was stertorous. His pulse were weak and frequent, face pale and heat diminished. His skin was heavily bedewed with a cold and clammy perspiration. His tongue was dry and brown.

His breath and the cutaneous exhalation emitted a urinous odor. He seemed to prefer to rest on his side, with the lower extremities drawn upwards. He had several serous alvine evacuations during his illness.

No urine had been voided although his desire to do so had

been, until a few hours previously, most urgent. His abdomen was enormously distended, very much resembling an aggravated case of ascites, and the skin covering it presented that smooth, shiny appearance that is observed in that disease. The superficial veins were greatly enlarged and gorged with blood, but notwithstanding all this, I was enabled to detect a circumscribed tumor in the lower part of the abdomen, which I knew to be the bladder distended with the urine which had accumulated during the past fifty-five hours, not only from the natural secretion, but from kidneys stimulated by diuretics. Pressure upon the hypogastrium seemed to cause much pain. The perineum was tender and swollen. The tissues of the penis were tumefied and hardened, and the glans and prepuce to such a preternatural extent, as to cause phymosis. In order to ascertain if there was any urethral obstruction, I took a small instrument and when I had inserted it to the depth of half an inch from the *os urethræ*, I felt it rest agains an impediment which gave the sensation characteristic of the presence of a metallic substance. The cause of the retention was now manifest. I thought it probable the boy, ignorant of the serious consequence which might result, had, while playing with his penis, as little boys are often observed to do, introduced the offending material into the urethra, a supposition that was incorrect. I had not with me forceps adapted for the removal of the calculus. I therefore endeavored to loosen it from its bed, with the small instrument already inserted. I then withdrew the instrument, and by making forward pressure along the urethra, in the rear of the location of the obstruction, and retracting the glans in a methodical manner, I soon brought into view the smallest extremity of the calculus. I then took a firm hold of the exposed portion, and maintaining the pressure to which I above alluded, although being compelled to exert considerable force, I was soon enabled to free the canal. A full stream of urine followed its removal. I did not measure the quantity, but full aware of the great power of expansibility possessed by this viscus, the amount, judging from the vigor of the stream, and the duration of the flow, would seem incredible. When the urine ceased to

pass, gentle pressure above the pubis, caused a very great additional quantity to be voided.

The tumefaction of the abdomen immediately very much abated, but the muscles remained very flaccid. The little sufferer's constitutional symptoms were not improved. The condition of the respiration and circulation made me apprehensive that dissolution would soon ensue. I ordered that he should be immersed in mustard water, after which turpentine should be applied to the spine, sinipisms to the extremities, fomentations to the abdomen, gentle pressure over the bladder every hour, and that a drachm of brandy should be given every half hour. Deglutition was almost impossible, and the boy was bordering upon complete coma. He at intervals passed a considerable amount of urine, and especially when the pressure was made as above described. It was twelve hours before his grave symptoms commenced to perceptibly abate; but after this time, his improvement was rapid, and very soon a urinous odor could no longer be detected in his breath, or in the exhalation from the cutaneous surface. His respiration and pulse were almost normal, and a brief continuation of the stimulant completed the convalescence. The calculus that accompanies this paper shows that it was formed in the bladder. There can be no doubt but that it entered the urethra when he first manifested severe illness. It descended with the smallest extremity forwards. This was the position most favorable for its transmission. It is somewhat elongated. Its longest diameter is seven-twelfths of an inch, and its greatest circumference is five-sixths of an inch. It is the largest calculus that I have known to pass the urethra of a child, and it is to me marvelous that it did so successfully.

This case illustrates to us the necessity of a correct diagnosis, especially in cases of such gravity. Vesical retention should not be confounded with suppression of the urine. It is an inexcusable error to do so. Yet there are complications where, unless a physician be upon the alert, he may commit a lamentable mistake. In a very fat individual, or one with a tympanitic abdomen, it will not answer to rely upon the touch. Percussion, in this case, will furnish a better guide, the part occu-

pied by the distended viscus will yield a less resonant sound. It is truly astonishing to what an extent the bladder will sometimes expand, before there will be a destruction of any part of its parietes. Cases are on record where it has reached the scrobiculus cordis, and frequently the fundus has been as high as the umbilicus. Cases are mentioned where sixteen pints of urine have been evacuated from the bladder of an adult, and five and six quarts are not very unusual.

MACKINTOSH mentions a case of vesical retention, where the fundus of the bladder became attached to the tissues in the vicinity of the umbilicus, and from which the urine subsequently escaped. BILLARD says he has found it in children to fill the whole cavity of the abdomen; and HOWSHIP and PARRISH have found it under such circumstances to contain twenty ounces, and the ureters to acquire a diameter of an inch or more. Much greater quantities are mentioned by others. It has been mistaken for ascites, when distended so as to occupy almost the entire abdominal space.

Such cases have been mistaken by some of our great men. Prof. GIBSON, of Philadelphia, was called to a child about two years of age, supposed to labor under ascites, and so strongly did it resemble the disease, that he at first took it to be a case of the kind, but upon learning the history of the case he was induced to examine the urethra, where he found a calculus. Upon enlarging the orifice with a lancet, the stone was instantly pushed out, and followed, to his surprise, and that of a medical attendant, by two quarts of urine. Dr. PARRISH reports a similar case. Sir EDWARD HOME relates an instance in which the celebrated Mr. HUNTER actually tapped the bladder, supposing the case to be one of abdominal dropsy.

But such cases are anomalous. Usually before it will submit to such an expansion, there will be sloughing or ulceration of some part of its parieties or that of the urethra, and the urine will escape into the tissues adjacent to the rupture. In such cases, or those complicated with ascites, in addition to other means, the introduction of a finger into the rectum, or a catheter into the bladder will be sufficiently diagnostic. When the

retention is partial and the accumulation takes place gradually, the viscus accommodates itself, to a certain extent, to the additional pressure, and great distention may occur without the patient suffering much pain; but unless discovered and relieved the same symptoms will occur as in the acute form, and the same fatal termination. I have reason to believe that this form of retention is often overlooked. In diseases attended with great prostration, where there is deficient innervation, and patients are only partially conscious, as is often observed in typhoid fever, I have known it to be disregarded. The attendants may think that sufficient urine has been voided. It may pass involuntarily, the bladder having lost to a degree its contractile power, and yet the system is being prejudicially influenced from urinary retention. I am well satisfied that the catheter is not used in these cases as frequently as it should be.

The retention of urine in new-born infants is often overlooked or carelessly regarded as suppression. The obstetrician sometimes prescribes, at his office, diuretics for such cases. The symptoms are aggravated. He now goes to see the infant, but irremediable damage has been done. I have known an instance of the kind. In such cases, the obstruction will, in most instances, be found at the neck of the bladder or in the urethra, and I believe almost always in the latter. The retention may be complete or partial. It may originate from inspissated mucus. This cause by many is regarded as very frequent. CONDIE thinks it very rare, having met with but two cases in thirty-six years' practice as an obstetrician. Perhaps a more common cause is an occlusion of the urethra by a thin membrane, situated at or near the orifices. Adhesion of the lips at the external orifice, sometimes impedes the flow. Morbid irritability at the neck, and inflammation may be enumerated as causes. Spasmodic contraction at the bulb of the urethra is sometimes assigned as a cause. I think the last three causes to be very rare in the new-born. The obstruction is seldom permanent, but almost always remediable, and requires but the medical attendant to have a correct comprehension of the difficulty.

In such cases, even though the impediment is not removed, rupture of the bladder does not seem to be very frequent, but the infant mostly perishes from paritonitis or cephalic disease. The cases of partial retention in infants are the more fruitful source of error. Congenital or induced phymosis has latterly been added to the causes of more or less permanent retention of the urine. This cause is now attracting considerable attention. Sir CHARLES BELL, Mr. GUTHRIE, and other well known writers on diseases of the urinary organs, have not alluded to it as a cause of urethral and vesical affections in the young.

Mr. PRICE recently, in a very able paper, read before the London Medical Society, stated this to be one of the most common deviations from the normal construction of the preputial and glandular portions of the penis; and stated his conviction that it was one of the most frequent causes of genito-urinary disturbance. He cited a series of cases of retention which originated from this abnormal condition, and urged that it should be promptly corrected. There are other causes of the trouble. The subject is full of interest, not only vesical but renal retention. The physician, in this as well as in many other diseases, gives too much credence to the statements of attendants, and is thus led to form, in some cases, a very erroneous and fatal diagnosis.

Cases of rupture of the bladder are reported, where the infant's sufferings were confidently attributed to other causes. Hence the necessity of a personal examination, in order that his appliances may be the correct ones. A physician cannot be free from censure, if he has the medical care of children with symptoms indicative of urinary retention, if he neglects to institute a cautious, careful, and thorough examination, that will reveal the true condition, notwithstanding the assurances of the ordinary attendants, that no difficulty need be apprehended.

My remarks have been intended to apply chiefly to the young. Not to discuss the treatment of the disease, but to glance at some of the more prominent causes of vesical retention. It would require many additional pages to discuss this subject in the full and systematic manner it deserves. There are few dis-

eases more fruitful in evil and error, and certainly merits more consideration than is usually allotted to it.

ARTICLE XV.

REPORT UPON THE SANITARY CONDITION OF THE WEST DIVISION OF CHICAGO,

FOR THE YEAR 1860-1.

By H. WEBSTER JONES, M.D.

Read to the Chicago Medical Society, April 2, 1862.

MR. PRESIDENT AND GENTLEMEN:—As one of your Committee of Observation upon the sanitary condition of the city. I should have taken great pleasure in extending my inquiries beyond the limits of my own practice, had I possessed any earlier knowledge of my appointment, than was afforded me on Monday of the present week.

As it is, I must beg your leave to offer such brief statements and remarks upon the subject as I have been able, hurriedly, to collate from my own professional note-book, premising that my experience must not be held as a criterion upon which to base any scientific and sanitary deductions.

In fevers, I noticed a predominance of the typhoid, during the months of September, October, and November.

Most of my cases were among female children under 14 years; the disease, from its outset to the establishment of convalescence, averaging a duration of three weeks. There was in none of them any marked tendency to intestinal complication, though the gravest signs pertaining to the nervous system, were often present. As a general thing, tonics and stimulents were borne early and well. I may add, that as a remedy for continued nervous excitement and unrest, I found none equal to the cannabis indica.

I have seen few cases of intermittent or remittent fever, and those readily yielded to ordinary treatment.

Of the exanthemata, no proper epidemic has seemed to me to

prevail, at any time during the year. Of scarlet fever, however, I have heard of several cases, which might be classed as "anginose," and even "malignant;" but they have proved sporadic, and were not communicated *in kind* to those who were exposed.

Measles have been frequent, but not severe, so far as I have observed.

Small pox has been *heard of*, only, during the year.

Of erysipelas I have seen no cases.

Rheumatism seemed to observe its due proportion, comparatively. In one of my cases, where the patient had, years before, suffered from a like inflammatory attack, I found instant relief to follow the use of guaiacum and colchicum, when the "alkaline treatment" had proved unavailing.

During the latter part of the winter, and early spring, I observed the prevalence of an unusually severe and obstinate influenza, attended with great congestion of the mucous linings of the nasal passages, frontal sinuses, and eustachian tubes.

I have seen a fair average, only, of pulmonary and pleuritic inflammations. Where, in one case of pleurisy, effusion took place, I found great benefit to result from the use of a strong iodine ointment, frequently applied, and protected by oiled silk and cotton, to promote its absorption.

In one case of pneumonia, in a child of eight years, I met with a rare pathological condition of the parts, a condition which might possibly, (unless the *physical signs* appertaining to it were carefully corrected by the *rational symptoms*,) lead one to error in diagnosis and prognosis.

Briefly, it was this:—At what might be considered the "height" of the disease, the lungs were both everywhere *dull under percussion*, except in their *subclavian regions*. *There* a fine crepitus was discerned; but elsewhere only bronchial respiration was audible. Within twenty-four hours after, the fine crepitus heard in the subclavian regions began to extend itself over the whole anterior surface of the lungs, which surface began also to give clearer sounds on percussion. Another day made the same facts more evident, and even posteriorly, both lungs gave the crepitus of "resolution;" but *here* the sounds

elicited by the finger were still perfectly dead; at the same time, a puffiness of the neck, on the right side, was observed, which, upon pressure, distinctly crepitated. The patient steadily sank, and died in a few hours.

The autopsy, made shortly after death, disclosed a thorough hepatization of the posterior halves of the lungs, the anterior portions being emphysematous. Air had escaped into the cellular tissues of the neck, into the mediastinism, and even lay in clustered vesicles over the surface of the pericardium. The child had been comatose for forty-eight hours preceding its decease.

The point of interest was the similarity between the ordinary signs of the resolution of pulmonary inflammation, and those given by the advancing emphysema—the sounds being heard distinctly, even behind—through the condensed and hepatized structures, though, here, percussion contradicted the supposition that air was again finding its way into its accustomed channels.

Another case of pneumonia of the left lung—occurring in a boy of seven years—and advancing to the second stage of the disease, interested me in its entire and rapid disappearance under the administration of the veratrum viride alone.

During the autumn, I saw several serious cases of "diphtheritic croup," and two cases of *pure* diphtheria, which proved fatal. My impression is that the latter is a very rare disease; that it has never been as common as generally supposed; that it has not been met with so often, during the past twelvemonth, as in the preceding year; and that it has, so far as I can learn, when *distinctly* present, terminated fatally in by far the majority of cases.

During the summer months, I observed nothing unusual in regard to the prevalence or degree of severity of bowel complaints.

Since January last, I think I have heard of more cases of puerperal fevel than has been common for many months previous.

In conclusion, I believe it conceded by all, that the past year

has been one of very general health, though the demands made upon our profession have been more steady, and less interrupted by periods of "stagnation," than for several years previous.

Army Correspondence.

PITTSBURG LANDING, TENN., *April* 17, 1862.

EDITORS MEDICAL EXAMINER:

Desirous of adding field service to my experience in military surgery, I have, as you know, accepted a position in the army. I chose the artillery in preference to infantry, or brigade service, because that arm of service is always in action, and gives the greatest variety of gunshot injuries. Accordingly, I have pitched my tent under these greenwood trees, as the surgeon of the 1st Regiment of Ill. Light Artillery, Col. Webster commanding.

Many volumes might be written on the surgery of this great battle of Pittsburg Landing, but I will only give you a cursory sketch of such points as are at present most easily ascertainable. The wounds were of every conceivable character, from a scratch of the epidermis to the knocking off the shoulders of the whole head.

I saw several exceptions to the general rule, that the modern elongated bullets keep a straight course, not turning to the right or left for any obstacle. I cut out one from the thigh, which had glanced from the femur. It was bruised out of shape, and flew in a crooked course, beneath the skin, to a distant point in the limb, while the bone was not broken. Other similar cases were occasionally to be found. I cut out several balls from beneath the scalp, which had flattened themselves to wafers against the skull, without breaking the bone. Several cases fell under my notice, in which balls barely penetrated the outer clothing and stopped, merely brusing the skin beneath.

The projectiles of the enemy were round shot, shell, cannister, grape, long bullets, round bullets, and buckshot. There seemed to me to be an unusual number of wounds from spent balls, which was explained when I saw a captured box of rebel cartridges. Many of these only contained half the usual charge of powder, apparently being thus made from motives of economy of that material. The slaughter, however, was terrible. Our wounded must number from three to five thousand. The surgeons showed commendable courage, and, indeed, seem to have exposed their lives unjustifiably, in some cases. One surgeon, whose name I cannot learn, was killed, and six or seven were wounded. Among the latter, was Dr. Frank Reilly, the junior editor of your Journal. He was shot in the leg, fracturing the fibula, while attending to the wounded of the Illinois Lead Mine Regiment, as assistant-surgeon. His wound disabled him from field service, and necessitated sending him home for recovery. Dr. Roskotten, of Peoria, was injured. His horse was shot under him, and falling on his leg, disabled him from field service. He went on board a hospital steamer, and rendered valuable service among the wounded there.

Dr. H. WARDNER, late demonstrator of anatomy, in the Medical Department of Lind University, was very active, and has furnished me the following account of his operations:—

DR. ANDREWS, *Dear Sir:*—On the 6th inst. our regiment was ordered into battle, on the extreme left of our lines, to support Col. Stuart's brigade. I followed the regiment with my hospital attendants and regimental brass band, taking with me a supply of dressings for temporary use on field. While seeking a suitable position for a field depot, I came within direct range of one of the enemy's batteries. I ordered my attendants to lie down behind a small elevation of ground, until the range might be changed, which was done in about fifteen minutes. I then, with assistant-surgeon Bane, of the 50th Illinois, established a depot in a ravine, about three hundred yards in rear of our line of battle.

At this piece, *ten* of my regiment were brought to me, two mortally, and the rest badly wounded; among the latter Capt.

Swain. At this time, the balls, shells, and bullets came in such volleys over our heads, that we knew the enemy to be rapidly advancing upon the ground, and about ten minutes later, had the dissatisfaction of seeing, from an opposite bluff, our depot ground in possession of the enemy. I then moved towards the Landing, and met Dr. Hewitt, medical director, at the log building used as post office, and received an order from him to give my attention to the wounded in the tents near the steamer City of Memphis. At this place, I had amputated one arm, and had just taken the knife to operate upon another, when a rifle ball whistled over our heads, doubtless fired at the men at a battery about fifty yards in our front.

The battery then opened upon the enemy and thus drew their fire upon us. All the wounded who could crawl out of their tents were immediately seen scrambling down the river bank, some upon their haunches, others upon their bellies, and in all shapes were seeking a cover from the danger threatening them. Night soon put an end to our efforts in surgery, and taking a few of the worst cases about me, I went on board the steamer Chessman, and remained until the afternoon of Monday.

On board this boat I performed five amputations. On the morning of Tuesday, I was ordered to report to Brigade-surgeon Derby, on the steamer City of Memphis, and was by him placed in charge of the wounded on the hurricane deck. On this day, I performed five capital operations, assisted by Dr. Shirriff, and an invalid surgeon, whose name I disremember.

On Monday morning, the boat went down the river, and I rejoined my regiment, where I performed one amputation.

On Sunday the 13th, I succeeded in getting the last of our seriously wounded in hospital boats.

My regiment lost 22 killed, and 86 wounded.

The following is a table of operations, with results as far as known:—

1.	Left arm,	Amputated	above	the elbow,	Successful.
2.	Right "	"	"	"	"
3.	" "	"	"	"	"

4.	Right leg,	Amputated,	upper third,	Successful.
5.	" thigh,	"	middle "	"
6.	" leg,	"	upper "	"
7.	Left thigh,	"	" "	Fatal.
8.	Right leg,	"	" "	Successful.
9.	" arm,	"	" "	"
10.	" thigh,	"	middle "	Fatal.
11.	" leg,	"	upper "	Successful.

Besides the above, I performed many minor operations, as amputations of fingers, extractions of balls, &c., &c.

It may be interesting to append the following list of amputations, &c., performed by me at Fort Donelson:—

1.	Fore Arm,	Middle third.	Successful.
2.	Arm,	" "	"
3.	Right leg,	" "	"
4.	" thigh,	Lower "	"
5.	Left shoulder,	At joint,	Fatal in 5 weeks.

6. Lower jaw, large portion removed leaving angle and condyles. Successful.

7. Extraction of a grape-shot.

This entered the right cheek, in front of the angle of the lower jaw, knocking out the back molars, passed into and through the pharynx, opening the trachea, (so that when the man tried to drink he was strangled,) and lodged on the left side of the neck, resting upon the brachial plexus of nerves, thus causing paralysis of the left arm. I removed the ball without the loss of more that a drachm of blood. Brigade-surgeon Brenton being in consultation.

Several surgeons have since claimed the credit of this peculiar operation.

The extraction was performed by cutting at the outer border of the mastoid muscle, pushing the external jugular vein back, and the muscle forward. The dissection was then continued with the handle of the scalpel, and the ball raised out with an elevator.

H. WARDNER, Surgeon, 12th Ill. Vols.

I saw one instance showing how an operation seems to stimu-

late and revive a sinking patient. I found a poor "secesh" fellow on the wet ground in a tent, three days after the battle, with a minnie ball hole through, shattering and comminuting, the femur, and another similar one through the tibia. Gangrene had already set in, the pulse could hardly be felt at the wrist, and the case seemed hopeless. Giving him what attention I could at the moment, I went on to assist others, but after an hour or two I returned to him and determined to give him the chance of an amputation. Accordingly, I put him under the influence of chloroform, when the last remnant of pulse disappeared from the wrist. I, however, proceeded and amputated the thigh at the middle third. As I proceeded the pulse returned, and in an hour he was better than he had been for twenty-four hours. He was put on stimulants and the next day was still further improved. He was then sent to a hospital steamer, and I was unable to learn his fate.

The system of management here is most advantageous for the wounded; but it is unfortunate that no reliable statistics can ever result from it. The wounded are rapidly dressed on the field and some amputations, etc., there performed. The pressure of the labor, however, on the surgeon, prevents any adequate written account of all his cases, and never allows him to preserve full record of names, companies, and regiments. From the hands of the field-surgeons, the patients are taken by ambulances to hospital steamers, where any necessary additional operations and dressings are made. As the number of surgeons on board is very limited, they are taxed to the utmost, and have no time for recording their cases. As soon as the boat is filled she moves down the river to Paducah, Mound City or, other general hospitals, and discharges her suffering cargo. Here the secondary operations are performed, and here only, are any perfect records possible. The field-surgeon may remember and write down many cases, but he cannot ascertain their subsequent history. The boat-surgeon knows neither the subsequent nor previous condition; and the general hospital-surgeon knows nothing of the previous history, nor has he any account from those who have preceded him. For these rea-

sons the surgical history of this war will never be perfectly written.

The Government supplies of medicines here are very inadequate to the necessities of the case. I have not been able to get anything at all aproximating to the field supply table. For a considerable time I could not procure a single article of the mercurial class, and the third day after the battle I drew the last half-pound of chloroform but one, from the purveyor. Fortunately, I obtained a new stock of the latter from the Sanitary Commission stores. I have not been able to procure any veratrum viride, nor a single expectorant, except buchu, to this day. This dearth is partly owing to losses of regimental stores in the battle.

Some of the surgeons here are, as might be expected among so many, ignorant. After the battle, I found for days numerous bullet wounds which had been carefully stuffed with lint, and the plug kept in by adhesive straps, as though the surgeon desired to retain all the discharge. Considerable difference of opinion and practice prevails respecting the question of what cases should be amputated. In the inferior extremity, some sacrifice every comminuted compound fracture of the femur or tibia, while others only amputate in cases where the nerves and vessels are also destroyed. The passage of a bullet through the thigh bone, when it comminutes it badly, produces a fearful injury, with but trivial external evidence of its grave character. Hence, not a few surgeons in the army simply omit all efficient treatment in these, being lulled into a false conservatism by the trivial appearance of the bullet hole. But the internal condition is this:—the shattered and comminuted fragments of bone occupy a considerable space in the centre of the limb, creating in the surrounding tissues mortification of some portions, and intense inflammation of others. Meanwhile the orifices of the entry and exit of the ball, originally quite small, contract and prevent the free escape of pus, bone, and dead flesh from within. The result is, that the pus burrows among the muscles, the limb swells, the patient is worn out by suffering first, and discharge afterwards, and very generally dies. Still the mortality

after military amputations of the thigh is so fearful that one may well stagger, being 84 per cent. at the upper third, and over 50 per cent. any where in the lower two-thirds. On the whole my experience and the careful comparison of authorities, has brought me to adopt the following rule: For gun-shot wounds through the knee or ankle joint, amputate or resect; for those of the leg and thigh which destroy the principal arteries and nerves, and at the same time shatter the bone, amputate in all cases; for those which simply fracture the femur, without much comminuting it, do not amputate; for those which are supposed to have comminuted the femur badly, without injury to the nerves and large vessels, I give the patient chloroform, and with the finger, explore the wound, thoroughly, if the bone is badly shattered, enlarge the wound to the extent of several inches and take out, at once, every loose piece of bone, and if necessary, resect the ragged extremities of the shaft; I then take pains to keep the wound well open and bide the result; by this method the terrible inflammation and burrowing of pus in the centre of the limb is prevented, a comparatively simple form of injury is produced, and the awful risks of the femoral amputation avoided; if, however, the case required transportation for days, in wagons, before any rest in a hospital could be obtained, I should certainly amputate.

I am sorry to say that I see some surgeons recklessly cutting off arms, which might as well be saved, when the same men slur over fractured thighs and perforated knee joints as though they were less serious injuries.

PITTSBURG LANDING, TENN., *April* 24, 1862.

DEAR DR.—I received a letter, a few days since, from my brother, in which he says that you say "write to me." I have. But I saw Prof. Andrews, one or two days since, and he said, "write to the Dr. giving him incidents of the battle," &c. I will begin by giving your a letter, the original of which is in my

possession, word for word and letter for letter, except in the one item of names:—

"CAPTAIN ———, Ser, I have examined Mr Josuf ———, and find him unable to go into Survis at the presant time from debility of liver and disease which causes a ginerl debility of the hole sistem and I think he will not be able to go into Survis under 19 or 20 days. November the 23d 1861

Dr T. M. ————————

In the presents of G. T. M———————— J. P."

This I call decidedly rich; and it is not the only one of the kind I have seen either. They come to me too frequently. I presume from the "Ginerl debility of the *hole* sistem" mentioned in the letter the man must have diarrhœa; but the balance of the document borders on the mysterious.

I saw, during the recent battle, a very fine illustration of the difference in the effect of a cannon ball passing near the upper extremity or the lower. On Sunday the 6th inst. a man was brought in whose head had been very near the track of a cannon ball—which had not, however, disturbed even the hair. He was suffering very much from shock; perfectly insensible; the pupils dilated, &c.; in this condition he remained several hours. On the other hand, Capt. Anderson, of the 18th Ill. V. seeing a ball strike a horse, perhaps fifty yards in front of, and in a direct line from him, instantly leaped up from the ground, letting the ball pass under him, which it did, just touching his boot heels. He struck on his feet, however; and by stepping to one side, avoided the next one by an interval of four feet. Shock from a ball passing simply near one, without touching, is very strange. I have never seen it satisfactorily explained. I cut out a ball, which, entering the left breast, had carried in all the guard of a suspender buckle, and was found (guard and all) opposite the navel, on the right side. The man stood on his feet while I took the ball out; and he walked away very much pleased with my success in removing it. A ball struck the sleeve of a lieutenant's coat, which happened at the moment to be over the back of his hand. It was one of the large conical

balls, but carried the coat before it, and burried itself in between the metacarpal bones, where it remained so firmly impacted that I was compelled to enlarge the opening before I could remove it. The coat was not torn but completely surrounded the ball.

A very great number of interesting and instructive incidents might be gathered; and I mean to gather up as many of them as I meet, which will, in my judgment, be of permanent value, and let you have those you wish for your Journal. In the meantime, I shall remember the more striking *incidents* that come under may notice; and if I live through the war, shall visit Chicago, when I shall probably have more to relate than you will care to listen to. Truly yours,

O. B. ORMSBY,
Asst.-Surgeon, 18th Regt. Ill. Vols.

Extract from a Letter from Dr. Dumreicher.

CUMBERLAND, MD., *April* 18, 1862.

DEAR DOCTOR:—About six weeks ago, I was sent by Gen. Rosencrans to this place, there being a great want of surgeons, and the number of sick soldiers from the late Gen. Lander's division increasing very rapidly. I arrived here and found a great deal of work to do. 1500 patients and very limited accommodations. I worked hard for two weeks; had many cases of typhoid fever, pneumonia, typhoid pneumonia, rheumatism, &c. I succeeded better than I could expect; and was much pleased by receiving a very flattering official notice from the Med. Inspector and Med. Director of the Department. There is quite an epidemic around here of a peculiar disease of the throat,—something between diphtheria and the sore throat frequently accompanying scarlatina. It is hard to manage; and characterized by *extreme* prostration. I had such an attack myself, and was very ill. I am told that this disease has been quite fatal here. Respectfully and truly yours,

C. DUMREICHER.

Selections.

LECTURES ON NEW REMEDIES AND THEIR THERAPEUTICAL APPLICATIONS.

DELIVERED AT THE

NEW YORK MEDICAL COLLEGE AND CHARITY HOSPITAL.

By SAMUEL R. PERCY, M.D.,

Professor of Materia Medica and Therapeutics.

Reprinted from the American Medical Times.

THE ACTIVE PRINCIPLE OF COLCHICUM—COLCHICINA.

With the principle which I have prepared, and which is identical with the *colchiceine* of Oberlin (and of the chemical differences between this and the *colchicin* of Geiger and Hasse I have already spoken,) I have tried some physiological experiments. To a full grown dog, weighing about twelve pounds, I administered one grain finely rubbed up with one drachm of sugar, and enveloped in a thin slice of meat; this was thrust down the throat. For about one hour no change was noticed, excepting a gradual increase in the frequency of the pulse, being at the end of the hour fifteen beats more than at the commencement. Gradually the dog began to show restlessness and pain. In two hours he had a full copious discharge from the bowels, the first portions of which were natural in appearance, but the latter portion was light colored, pultaceous, and very frothy; vomiting also commenced, which at first consisted of thin mucus but as the retching continued, the mucus thrown up was small in quantity, and freely tinged with blood. Urine was passed at first freely, and as an old dog usually passes it, but as the dog grew weaker many ineffectual attempts were made, and constant straining in the way which a young dog usually uses, without throwing up the leg; although the efforts to urinate were frequent, no urine was passed after three and a half hours. The pulse in two and a half hours was thin, wiry, and frequent. In six hours the pulse was small, feeble and reduced to twenty-four beats in the minute. In the meantime the diarrhœa had been very troublesome: the discharges were thin ochre-colored, frothy, with frequent patches of bloody mucus. After the seventh hour the dog did not attempt to rise, the pulse became small, thready, and intermittent, and he died a little be-

fore the eighth hour, without convulsions. Upon post mortem examination the heart contained much thick, pitchy-black blood, and the same also was found in the ascending and descending aorta as described by Bley, and even in the arteries of the legs and neck; the mucous membrane of the stomach was only slightly congested, but the whole mucous membrane of the small and large intestines was inflamed, even down to the anus, near which there were several large abrasions. Upon removing the kidney, and dividing it with a sharp knife, the first appearance was one reddened inflamed mass, and upon more minute examination the Malpighian bodies were very red and much congested, the interlobular plexus was also very much congested, and the congestion extended even to the infundibula and pelvis of the kidney.

Two grains were given to another dog, which died in eleven and a half hours, with all the symptoms above described. Towards the pyloric extremity of the stomach there was an irregular patch of about the size of a dollar, highly congested; the other parts of the mucous membrane were not much changed; the small and large intestines were like those in the other dog; the heart contained the same black, pitch-like blood; the kidneys were if anything more congested than those before described; the bladder was entirely empty.

To a dog, weighing about fourteen pounds, two grains of this colchicina were given finely rubbed up with a drachm of sugar, and a scruple of tannic acid. The whole was enveloped in a slice of meat, and pushed down the throat. The restlessness of the dog seemed greater than with either of the others described. There was retching in half an hour, and in about an hour free vomiting. In an hour and a half there was copious diarrhœa. Thirty grains of tannic acid were given, but it did not control the diarrhœa; there was not the same desire to urinate as shown by the other dogs, but no urine was passed after the fourth hour. The dog died in fourteen hours. The post mortem appearances were nearly the same as in those described, excepting that the kidneys were not so generally inflamed, though there was great congestion of the Malpighian bodies and interlobular plexuses, but it did not extend beyond them as in the other case; the bladder contained about a teaspoonful of very dark-colored urine. Thus tannic acid is no antidote to colchicina.

To a cat, while under the influence of chloroform, was administered one grain of colchicina, enveloped in a small round ball of bread. In little more than an hour it purged her freely, and produced very great uneasiness, as she prowled round in a rest-

less and timid way, and constantly moaned. The tenesmus with the dogs was great, but with this cat it was very severe, so long as the strength lasted she seemed to make almost one continual strain. The cat died in eight hours. There was congestion of the stomach, intestines, and lungs; the right side of the heart was empty, but the left ventricle was distended with pitch-like black blood. The kidneys presented the same appearance as in the dog I first described.

Therapeutical Applications.—To a gentleman suffering with an acute attack of gout I administered one-forty-fifth of a grain of colchicina, three different times, at intervals of four hours. It produced no effect upon the bowels, but the urine was largely increased in quantity, and contained a very large amount of urate of ammonia and mucus. I could not perceive that it produced much change in the pulse. The dose was now increased to one-thirtieth grain, which I was obliged entirely to suspend after the third dose. The pulse fell in frequency twenty-eight beats, the urine continued to flow very freely, and still contained the same large amount of urate of ammonia and mucus; the bowels were opened several times, the discharges were of an ochre color, very frothy, and had a strong urinous smell; there was some tenesmus, and an inordinate amount of flatus, which rather amused him at first, but eventually became quite painful. As I remained some time with my patient, and saw no cause for fearing too severe an action, I gave nothing but large quantities of mild diluents. I had no occasion to repeat the medicine, as it completely arrested the paroxysm. The urine that was passed before the administration of colchicina was small in quantity, of very dark color, deposited uric acid in large quantity on cooling, and was of sp. gr. 1·021. That passed after the third dose of colchicina was large in quantity, of much lighter color, containing a very large quantity of urate of ammonia and mucus, and was of sp. gr. 1·030. That passed after the bowels had been very freely acted on was still large in quantity, and contained about the same quantity of urate of ammonia and mucus, and was of sp. gr. 1·025, thus making a difference in the amount of solid matters discharged of about twenty per cent. even in the same quantity of urine passed; but as the amount passed was certainly four or five times larger, the amount of effete matters carried off in this way must have been very great.

Another case of gout coming under my notice about the same time, I gave one-thirtieth grain of colchicina, and repeated it seven times, at intervals of from four to six hours. It acted more quickly on the bowels than in the previously mentioned

case, producing the same ochre-colored, frothy, and urine-like smelling discharges, as before spoken of, and producing much flatus and some tenesmus. The increase in the quantity of urine passed was very marked; the sp. gr. increased from 1·018 to 1·024, and uric acid and mucus were deposited in large quantities. This is the only paroxysm that this gentleman has had.

There is one other person to whom I have administered the colchicina. This person was suffering from a subacute, or rather chronic, attack of gout; he had gouty concretions of urate of soda, and enlargement of the joints. I gave him one forty-fifth grain three times a day, for ten days. It acted freely on the bowels three or four times daily, producing flatus to such an extent that he had to keep watch on himself when any one was near. The urine was increased in quantity and in specific gravity, and deposited large amounts of uric acid on cooling. He was very much benefited by the treatment. I find no other mention of the use of this agent in the treatment of disease, excepting by Dr. Guensberg, of Breslau. He has used it in many cases since 1853. Patients that had long suffered from gout, took, during the painful paroxysms of the swellings of the joints, one-sixtieth of a grain (of Geiger's) three times daily. In every case the remedy acted as an intense excitant of the intestinal secretion, even in such patients who had always before suffered from constipation. After three or four weeks' use of the colchicin, patients who before had suffered from an attack every two or three months, remained entirely free for a year or longer. But in acute articular rheumatism its employment did, contrary to his expectation, but little or no good.

Modus Operandi.—We have not a very large number of physiological experiments from which we may draw inferences as to the modus operandi of colchicina; but the few experiments that are given demonstrate its effects with greater accuracy than is usual with new remedies. We see by the physiological experiments on animals of Geiger, Albers, Hoppe, Aschoff, Bley, and Schroff, that colchicina uniformly acts as an irritant to the mucous membrane of the intestinal canal, producing frequent and copious alvine discharges; that given in the quantity of one grain or over to the smaller animals, it universally caused death, with pathological evidences of gastro-enteritis. We see, also, by the experiments of these gentlemen, that it enters the circulation and produces upon the blood the changes that a mere acrid poison does not necessarily produce. Aschoff and Bley have demonstrated its existence in the secretions. All of the experiments performed, those of my own included, demonstrate that,

although it induces vomiting, the vomiting only takes place after a considerable time, that it is first absorbed and that the vomiting is but the consequence of the gastro-intestinal irritation. Although it has been common to call colchicum an acrid narcotic, we see that it possesses no narcotic properties, that it has no special action upon the brain or spinal marrow, and that a very large increase of the dose but little increases the intensity of the symptoms, and does not hasten death. We see by the physiological experiments performed by myself, and also by the therapeutic action in the cases I have reported, that in addition to the effects above mentioned, we have an increase at first in the amount of urine discharged; but in poisonous doses the urine is soon entirely suppressed, owing to inflammation of the kidneys. This is not mentioned as one of the actions of this medicine by the gentlemen whom I have just quoted; but in the experiments I performed it will be remembered that no animal to which I administered it passed any urine after the fourth hour, and that after death none was found in the bladder. Upon examination of all the animals that I experimented upon, pathological changes, which alone were sufficient to cause death, were found in the kidneys; in two of them the whole organ was inflamed, and the congestion extended to the infundibula and pelvis. In the dog to which I administered tannin in connexion with the colchicina, the kidney was less inflamed than in the other animals, but a smaller quantity of urine was passed by this animal, and the desire to urinate was less urgent. After death the Malpighian bodies and interlobular plexuses were found highly congested. This was sufficient to prevent the elimination of any urine, and it appeared to me that the astringency of the tannin had had the effect to retard the passage of as much as usual of the poison through the kidneys. It will be seen in the cases in which I record the therapeutic action of the remedy, that the quantity of urine was largely increased, and that the effect was produced even before its action on the bowels; that in addition to the increase in quantity, there was also a very great increase in sp. gr., and that the amount of urates and mucus was very large. Guensberg, who alone in addition to myself has tried the therapeutic effects of this remedy, has only noticed that it acted as an intense excitant of the intestinal secretion; but his were chronic cases, which he probably saw but once a day; but he found that it produced absorption of the swelled joints. Schroff, who administered it by way of experiment to a person in health, states that "the urine was like whey, with abundant white sediment." It will be noted, then, that we have given several in-

stances wherein, administered in medicinal doses, colchicina increases both the quantity, specific gravity, and uric deposit of the urine. Let us turn again to the character of the fæces discharged; all state it to be large in quantity, mucoid, and frothy, and when it has been particulary examined, I have stated that it has a strong urinous smell. This effect is as marked with the administration of tincture of colchicum as with colchicina; and once, some years ago, I examined the fæces of a gouty person while under the influence of colchicum, and found them to containe a large amount of uric acid. It will be remembered that *Chelius*, of Heidelberg, many years ago, endeavored upon theoretical reasonings to explain that colchicum cured gout by eliminating uric acid from the blood, because he noticed that under the action of colchicum the amount of uric acid in the urine was much increased. This is disputed by those celebrated men Dr. Pereira and Dr. Graves, who not only deny that colchicum augments the excretion of uric acid, but state that it rather diminishes it when the remedy is given to its full effect. This, in my opinion, is one of the best evidences in proof of the theory of Chelius, for the gentlemen just named carry their observations only so far as to state that under the full effects of colchicum the amount of uric acid in the urine is decreased; here their observations cease; they make no examination of, or investigation into, the character, amount, and composition of the alvine discharges, nor have they examined the blood before and after the administration of colchicum. As I have just stated, I have in one instance proved that tincture of colchicum administered to a gouty person, to its full purgative effect, produced the elimination of a large quantity of uric acid in the fæces; that the urine before the purging contained more uric acid than it did after. In other instances where it was administered in small doses, not sufficient to produce purging, the uric acid in the urine was greatly and persistently increased. In the cases which I have reported of the therapeutic action of colchicina, we find the quantity of urine increased, as well as the specific gravity, and that the urates were in great abundance. This occurred from the time of the administration of the dose until free purging was produced; then the specific gravity was less, and the quantity discharged less, but both were more than before the administration of the colchicina. Guensberg found colchicina reduced the gouty swellings, and for many years colchicum has been used to reduce the deposit of urate of soda, occurring about the joints. It would seem, then, to me, viewing the various effects we find produced by colchicina, that its *modus oper-*

andi consists in its removal from the system of a large amount of urates. Chelius stated this to be its effects by noticing the augmentation of uric acid in the urine only; I think I have demonstrated his observations to be correct, not only in the amount of urates, but in the increase of the specific gravity also, and also by its presence in the alvine discharges. But the excellent work of Dr. Garrod fully explains these facts. In poisonous doses it first stimulates the kidneys, then the intestines; and destroys life at last, not only from the inflammation it produces in these organs, but by its preventing any secretion of urine, and by its acrid, poisonous properties upon the blood. Could the kidneys continue their functions, it would all be eliminated, and the system would recover from the poison; but, like most acrid poisons, it inflames and paralyses the kidneys, and is thence retained in the system, changing the character of the blood. I need hardly discuss the question of its absorption. I have so frequently during the session given you demonstrable proofs, by physiological experiments, that this class of remedies is absorbed into the circulation before they produce their peculiar effects upon the system, that repetition here I deem unnecessary. Being absorbed into the system, its action is catalytic, producing some peculiar change in the character of the circulating fluid, stimulating certain of the excretory glands, and passing out of the system after it has produced its peculiar effects. Its primary effects are upon the blood, for we find, when given in too small doses to act upon the bowels, that it always stimulates the kidneys, and increases the amount of excreted metamorphosed tissue. That its action on the blood is of that peculiar character to cause a rapid elimination of this product, is proved by the increase of the urates in the urine, and by their presence in large quantities in the fæces. Its action on the bowels, then, though always hitherto spoken of as its primary action, I deem but secondary to that upon the kidneys; and when the kidneys are unable to eliminate either it, or the changed materials that it produces, the blood becomes so altered as to be unable to become arterialized, and is found in the heart and arteries after death black and pitch-like.

Uses.—From the physiological effects of colchicina we may ask, What are its uses? We have seen from several cases that it has given speedy relief in gout, and from the known effect of colchicum for many ages in that disease we have empirical as well as rational proof of its value. Colchicina has never been used in inflammatory rheumatism, but the testimony of thoughtful men is that colchicum is of no service whatever in that dis-

ease. From its physiological action we have every right to draw deductions that it will be found of great service in those diseases where uric acid and the urates are in abnormal quantities, and require to be removed from the system.

When speaking of the action of colchicum I told you that objections were raised by some against the use of it in gout, because it seemed to lose its effects in subsequent attacks. Is not this rather the nature of the disease than the want of proper action of the remedy? A first paroxysm of gout is frequently easily controlled in a short time, and by a mild remedy, but each successive paroxysm fixes the diathesis more firmly on the system, until after a time no remedy will cure or cut short the duration of an attack, it only palliates the pain. A certain length of time is required, and a certain amount of abstinence necessary to enable the medicine even to relieve the symptoms; the gout then disappears for a time, and returns again at its regular period. Even in these instances colchicum greatly relieves the severity of the pain, and is necessary before a cure is effected. Another error is frequently committed:—Colchicum, and it alone, without regimen or diet, is depended on, and as it gives relief nothing is administered afterwards to correct the still existing depraved condition; whereas, had proper after treatment been resorted to, the patient would not be left in a condition to find fault with the injurious action of any medicine. One thing is certain, a majority of the cases of gout we meet with are quickly cured by the action of colchicum, and in many other cases it affords great relief from the pain, and is frequently the only medicine capable of giving relief. It is as near a specific in gout as an other medicine in other disorders; but it will be recollected that there are no specifics. Guestenberg demonstrated that colchicina afforded great relief to old and chronic cases.

Antidotes.—It has generally been supposed that tannic acid was an antidote to the poisonous effects of colchicum. Acting upon this view, Aschoff administered 15 grains of tannin to a dog, to which he had previously given one grain of colchicina; it had no antidotal effects. It will be remembered that I administered 20 grains of tannin in combination with 2 grains of colchicina, and afterwards gave 30 grains more of tannin, and that it had no effect in preventing the action of the poison, or prolonging the life of the animal. From the rapid manner in which colchicina was absorbed by animal charcoal, Carter recommends it as an antidote, and if it could be administered immediately I have no doubt that it would be perfectly protective

until means could be adopted to remove the whole from the stomach; but unless administered immediately it would be of no effect—because the absorption of the poison is rapid, and it would in no way counteract its action when once absorbed. Magnesia also has been recommended; but magnesia is very frequently given in large doses with tincture of colchicum, and yet the colchicum produces its peculiar effects. All that can be done is to counteract the effects of the poison, and this I conceive will be most successfully accomplished by full doses of opium and stimulents, with free diluents.

Doses.—Of the article made by Oberlin, and by myself, about one-twentieth grain should be the maximum dose. I found one-forty-fifth to one-thirtieth to be safe if not too frequently repeated. In these doses it produced promptly its characteristic effects, and had the advantage over any of the crude preparations that it was definite, and did not deteriorate on keeping. It is always difficult to get a good preparation of colchicum, and hard to keep it good. This, when once prepared, does not change, and is definite in its action.

RESINA PODOPHYLLI (PODOPHYLLIN).

Physiological Effects.—I am not aware that any physiological experiments that have been published have been performed on animals, either with the podophyllum root or with the resin. I have performed some few experiments on animals, but mostly to ascertain the purgative effects of the resin. With the fresh root I have tried no experiments either on man or animals, but from the descriptions found in the books, and from the relation of some few cases to me, it seems to produce great irritation of the intestinal canal, gripings, prostrating emesis, and catharsis, an irritable and frequent pulse, and profuse salivation. These irritant effects are produced by a volatile principle existing in the green plant and root, which is mostly dissipated on drying. The effect of the green root or plant, or the fresh decoction of them, upon the mouth and salivary glands, resembles in a mild degree that of the Arum triphyllum, and the profuse salivation produced is principally the effect of the local stimulation, for salivation is but very slightly induced by the dried root or resin, unless it is given to its emetic effect; then it acts as emetics in general, and freely increases the secretion of saliva. It has been so frequently asserted that podophyllin produces salivation that I have taken much pains to ascertain its action in this respect, and I found, when given in pills or capsules in small and frequently repeated doses, or in one large dose, that it has

no persistent sialagogue action, and no effect like mercury, producing soreness of the gums, fœtor of the breath, and profuse and continued secretion of saliva. As I before stated, when given to its nauseant or emetic effect, it always induces a free secretion of saliva, but as its emetic action passes off so does its sialagogue action also. But if the resin is given in powder, so that it produces a local stimulation upon the glands, I have seen abundant secretion of saliva for one or two hours. In this way it is merely a topical irritant, not a true sialagogue. There are no means of ascertaining whether the resin when passed into the stomach in capsules can be detected in the saliva, but that it exists in the saliva, when administered by the mouth in powder there can be little doubt, for the resin is soluble in the saliva.

Of the commercial podophyllin (of Messrs. Keith's manufacture) I have given two grains to a dog; in eight hours it produced three free alvine evacuations. The same dose was repeated the next day, and it acted on the bowels in three hours, and during the day caused more than a dozen evacuations. To the same dog I administered, by hypodermic injection, under the skin of the leg, one grain of podophyllin dissolved in liquor potassæ. It produced great local irritation, free purging in two hours and twenty minutes, evident colicky pains, and much tenesmus, with retching, but no vomiting.

To a man suffering with constipation of the bowels I have sprinkled two grains of the resin in fine powder over a large indolent ulcer. It caused great pain in the ulcer, free catharsis in six hours, with nausea and severe griping pain. Within twenty-four hours it acted on the bowels seven times. The appearance of the ulcer was improved by the application.

Podophyllin, when administered to a person in health, is an efficient and certain cathartic; slow in its operation if administered in proper medicinal doses, but if administered in large doses quick and violent in its action, causing nausea, vomiting, and repeated and painful purging of mucous and billious matters. When taken in powder in moderate doses it is not very disagreeable when first put into the mouth, but as soon as the saliva dissolves a portion of it becomes disagreeably bitter and nauseous, and the sensation it leaves in the mouth and fauces is quite unpleasant; when taken in this way there is a free secretion of saliva for some time. When I have taken the powder finely rubbed up with sugar in this way there is no sensation experienced in the stomach for an hour or more, excepting the first sensation of nausea from the disagreeable taste. In about an hour, if it has been taken fasting, there is an uneasy

feeling in the stomach, accompanied with nausea and free salivation. This lasts for about an hour, and it feels as though a large secretion of gastric fluid was being poured out, and the stomach feels as if in a state of commotion. Soon the influence is felt in the small intestines, and unmistakable sensations of the secretion of the bile are experienced. In this stage of operation it produces on me exactly the same sensations as I experience from a full dose of calomel. The influence continues to be felt through the whole length of the intestines, producing active peristaltic motions, and the sensation as though acrid bile was freely passing. In about five hours one grain will purge me quite freely, and this is followed within two hours by two or three free bilious evacuations, producing upon me the same sensations and the same bilious-appearing alvine evacuations that I experienced from the same proportionate dose of calomel. In this dose it does not gripe nor produce much tenesmus, but during the whole time of its passage through the intestines there is an unmistakable sensation of a dose of medicine producing a chologogue effect within. If the same dose (one grain) is taken immediately after eating, and protected in any way so that it does not touch the mouth, no effects whatever are felt from it for two or three hours; then the effects in the intestines above described are experienced in a very modified degree, and the result will be one copious pultaceous evacuation. The after effects in both instances are an increase in appetite, and a feeling of better health. Most persons will require a rather larger dose of the commercial article than this, and many can take three grains.

Therapeutical Effects.—Podophyllin was first and most largely used by the "Eclectics," and many of them have written intelligently upon its therapeutic applications. By the Eclectics it has been called Vegetable Mercury, and its use has been recommended in all diseases in which mercury has been found to be of service. To a certain extent, and in some of its effects, it certainly does much resemble that drug.

Its greatest use is in that class of diseases usually called bilious disorders; that is, in those disorders where the whole digestive organs are deranged. In these disorders a dose of one, two, or three grains of the commercial podophyllin will be found to excite the secretion of all the abdominal organs, acting as an efficient purgative by this increased secretion. The largest number of patients whom we are called upon to treat are suffering more or less from these disorders, and it has undoubtedly been too much the case to give some mercurial for their

relief. In these disorders podophyllin, combined in the manner we shall hereafter describe, is fully as efficient to cause a free secretion from the intestinal mucous membrane, and from the liver and pancreas, as any of the preparations of mercury, and it is infinitely safer. There is a very grave accusation made against our Militia Army Surgeons for using too much blue pill and calomel in these disorders, and although the accusation is an unjust one against the majority of the surgeons there are undoubtedly some against whom it is too true. Our soldiers, who are so much exposed, should not use mercurials if it can be possibly avoided, and this article will, if properly given in these disorders, have a more beneficial effect, and will produce none of the evil consequences of mercury. There is but one drawback to its use, that is the inability of the patient being upon duty for ten or twenty hours after taking it owing to the nausea and tormina it produces if given in a full dose. In some of the forms of hepatitis it is of great value, and causes a full secretion of bile, but as this is not the only indication in the acute form of the disease, it cannot be relied upon to check the inflammation. In chronic hepatitis I have found it of very great service, acting better than any other remedy I am acquainted with, as it relieves the portal circulation by its action on the secernents. In this disorder it is not necessary, in fact it is frequently injurious, to give it in large and powerfully cathartic doses; I have found it better to give it in small and frequently repeated doses upon an empty stomach, sometimes combined with veratrum or hydrocyanic acid, at other times with strychnia or capsicum. The amount of bile and intestinal mucous secretion carried off by treatment of this description is sometimes enormous.

There are few diseases in which it is of more service than habitual constipation. In this disease small doses taken with the meals (frequently in combination with strychnia and capsicum) will in the majority of instances relieve the disorder within two weeks. It needs but proper graduation to give it in just the proper proportion.

From its thorough action upon the whole intestinal mucous surface, and upon the large glands, it is one of the best eliminants in infantile convulsions. For the same reason it advantageously follows the use of anthelmintics.

But as from the experiments I have made with it I will endeavour to give its mode of action, I would rather leave its application in diseases to your own judgment. If you know its physiological and therapeutic action, you can apply it intelligently in the treatment of diseases.

Modus Operandi.—We find that podophyllin consists of two resins, one soluble in ether, the other in alcohol, the resin which is soluble in ether being, in most instances, the most active. Both of these resins are soluble in solutions of a caustic alkali, and when so given act rather more quickly as a purgative than when given in combination with an alkali. It will be remembered, that when applied to an ulcerated surface it acted equally well upon the bowels as when given by the mouth, and that it also acted upon the bowels when injected under the skin of a dog. In my lecture on iodine I proved to you that the various secretions of the body had the power of decomposing, rendering colorless, and absorbing the insoluble iodide of amidine; the same is the fact with this resinous substance, which, although perfectly insoluble in water and saline solutions, becomes soluble in the saliva, gastric fluid, pancreatic and biliary secretions. It is absorbed into the blood, then, whether given in an insoluble powder, or held in solution by an alkali. So far as my experience goes, it acts with less irritation when given in solution in an alkali than when given uncombined with an alkali in either pill or powder; because in this way it is more quickly absorbed, flows freely over a larger surface, and thus causes less irritation of the mucous membrane. Most of the resinous cathartics act as drastic purgatives, and by their irritating action on the intestinal canal indirectly excite the liver, and stimulate it into activity, thus acting as cholagogues. The same result is produced in a very mild degree even in the process of digestion. But that this is not due merely to the irritation of the orifice of the hepatic duct, is proved by the dissimilarity of the operation by different materials that stimulate the duodenum in an equal manner. Again, we find that each particular medicine has its own peculiar operation, whether introduced directly into the circulation of the blood, or administered by the mouth. And we find with this agent that in whatever way administered it passes into the blood, is absorbed and carried through the system, producing its own peculiar action of exciting into activity the glandular system, and that by the augmented secretion of these glands it passes out of the blood, and removes from the system the effete matters secreted; thus doing good by removing not only from the bowels but from the glands the irritating materies morbi, no longer needed in the system, in this manner purging the blood. It is claimed for this medicine that it has an action on the liver similar to mercury, and owing to this asserted similarity it has been called vegetable mercury. How are we to arrive at the facts in this case? I am not aware that any chemical

tests could be applied to ascertain the presence of so small an amount of this agent in the liver, for it will be remembered that half a grain of the pure ethereal resin is a full dose. We cannot then, as Buckheim did with mercury, actually detect it in the liver of dogs to which it was given. But we can (and have by many careful experiments) ascertain that bile exists in very large quantities in the alvine discharges of men and animals to whom the resin has been given; and reasoning from good analogy, we can assert that it has an active agency upon the liver, because diseases of the liver and bilious derangements are cured by its operation.

Again, it is claimed for this medicine that it has a powerful *alterative* action. Using this word in its fullest sense, we cannot but acknowledge that it produces the effects claimed for it, for as the term is used it signifies medicines which *alter* for the better the state of the system. From the action that the resin exerts upon the blood we have seen that it stimulates the function and increases the secretion of various glands, in this way *altering* the composition of the blood itself, and becoming a blood medicine by the change it produces in that fluid by its true eliminative action.

It is asserted by one practitioner, that he has cured one hundred and twenty cases of syphilis with podophyllin, and that it acts as well as mercury, without any of its injurious effects. It is undoubtedly obvious to many observers that there is a great decrease in the cases of syphilis of the true Hunterian character, and that a great majority that now exist are readily cured without the use of mercury by good local and general treatment. Of such as these were no doubt the cases here spoken of. Let those cavil who will, but it is an indisputable fact that syphilis is of a milder character here than it was twenty-five years ago; and the great majority of cases can be cured without any mercury, and podophyllin in mild cases of soft chancre would be better than most other remedies.

Of its sialagogue action we have spoken in another place.

It is to be regreted that so few physiological and chemical experiments have been performed with this medicine, for without them we are to a great extent ignorant of its true modus operandi. I have before promised you that, with Dr. Elsberg's assistance, I will at our earliest convenience give to the public a work on New Remedies and their Therapeutical Application. Before that work is published I will endeavor to institute a series of experiments, so that we may be able to give a more full and ample account than I can now do, and with this expla-

nation you will excuse me for leaving unsaid many things regarding it that you would otherwise have expected of me.

Doses, and Modes of Administration.—As the podophyllin made by different manufacturers differs in its composition, the amount required for a dose will vary according to the sample that is taken. Again, it will vary in its action; for when the pure resins is taken alone it acts more quickly, and produces more pain than when given in combination with some carminative or sedative. Of the samples that are in the market the full purgative dose for an adult will vary from one to three grains. The amount necessary to be taken will vary of course with the effects required to be produced. If an ordinary dose of "bilious medicine" is required for an adult man, a very good pill will be:—Podophyllin, two grains; capsicum, two grains; both finely powdered and well rubbed together, and made into a mass with a small amount of honey. This pill may be taken at bedtime, and will generally operate in the morning, without causing much uneasiness. If a dose is required for a delicate female, a pill may be made in the following manner:—Podophyllin, dried carbonate of soda, each one grain; extract of hyoscyamus, two grains. This will be moist enough to work into a pill, and may be taken at bedtime. It is difficult to get children to swallow pills. I therefore usually prepare a syrup in this manner:—Podophyllin, four grains; liquor potassæ, sixteen minims; syrup of ginger, one fluid ounce. The podophyllin, in fine powder, is rubbed in a warm porcelain mortar with liquor potassæ, and as saponification takes place the syrup is gradually added. For a child from six to ten years old, the dose will be a teaspoonful.

Book Notices.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By GUNNING S. BEDFORD, A.M., M.D., Prof. of Obstetrics and of Diseases of Women and Children, and of Clinical Obstetrics, in the University of New York; Author of "Clinical Lectures on Diseases of Women and Children. Second Edition. New York: William Wood, 389 Broadway.

As the first edition of this work was issued scarcely six months since, and was then highly recommended in the pages of the EXAMINER, it is unnecessary to make any extended

notice of this second edition. Indeed, the fact that a second edition has been called for in so short a time, is the strongest proof of the high estimation placed upon it by the profession. It is a very full and complete treatise on the Science and Art of Obstetrics. The publishers have also executed their part of the work in good style. It should have a place in the library of every practitioner.

Minor Surgery. On Bandaging and other Operations of Minor Surgery. By F. W. Sargent, M.D., Member of the College of Physicians of Philadelphia, one of the Surgeons to Wills' Hospital, etc., etc. New Edition, with a Chapter on Military Surgery, By W. F. Atlee, M.D., and 187 Illustrations. Philadelphia: Blanchard & Lea. 1862.

This is just such a work as its title imports. The first edition has been some time before the profession and its merits are well known. The present edition is considerably enlarged and, with the chapter on Military Surgery, will be found exceedingly convenient, and valuable to all members of the profession; but more especially so, to Military Surgeons and Students. It is published in the well-known excellent style of Blanchard & Lea. 12mo., pp. 383.

Nineteenth Annual Report of the Managers of the New York State Lunatic Asylum. Transmitted to the Legislature, Feb. 5th, 1862. New York.

This is a neatly printed pamphlet of 39 pages, chiefly occupied with a statistical report of the Superintendent and Physician, Dr. John P. Gray. There is also a brief report from the Board of Managers and the Treasurer, with an appendix, containing the laws regulating the admission of patients, and the general management of the Institution.

Forty-fifth Annual Report, on the state of the Asylum for the relief of persons deprived of the Use of their Reason. Published by request of the Contributors. Third month, 1862. Philadelphia.

This report has reference to one of the oldest and, perhaps, best managed asylums for the Insane in this country.

The present Medical Superintendent and author of the report is Dr. J. H. Worthington.

Annual Report of the Officers of the Indiana Hospital for the Insane. For the year ending Oct. 31, 1861. By JAMES S. ATHON, M.D., Superintendent. Indianopolis.

This report is similar in its character and interest to the two preceding, though printed on poorer paper and in inferior style. These several reports in relation to the Insane, afford much material for reflection and intesting inquiry, especially in relation to the causes of mental derangement. For instance, these three reports state the probable causes of Insanity in 3073 cases. Of these 461 are ascribed to "ill-health;" 230 to "domestic trouble;" and 177 directly to "intemperance." But it is our present purpose simply to announce the publication of these reports, without commenting on their contents.

THE ACTION OF THE VOLUNTARY MUSCLES. An extract of sixteen pages from an unpublished work. By LOUIS MACKALL, M. D., Georgetown, D.C.

In the pages sent us with the above title, Dr. MACKALL advances the doctrine that the *active* state of a muscle is that of *elongation* instead of contraction; thus reversing the mode of action hitherto regarded as fully established.

Thus he says: "The extension of the leg on the thigh is effected by the action of the muscles on the *posterior* surface of the thigh bone or femur, while the leg is flexed on the thigh by the action of the muscles on the *anterior* surface of this bone;" &c. He represents the innervation or active determination of nerve force to a muscle, as producing *erection and elongation* of its fibres; while the withdrawal of nerve force produces contraction and repose in the muscle. To establish these novel doctrines in relation to muscular action will require a much stronger array of facts and experimental demonstrating than are to be found in the pages sent us by Dr. MACKALL.

THE LONDON LANCET, for May is, as usual, promptly on our table. It also contains its usual amount of practical and interesting reading matter.

Editorial.

EDITORIAL CORRESPONDENCE.—CONGESTIVE OR PERNICIOUS FEVER.—The following letter from Dr. ORMSBY, in relation to a case of sudden death will be read with interest; and we copy it entire, for the purpose of bringing the subject of pernicious fever more fully before our readers. The letter is as follows:—

CASE OF CEREBRAL CONGESTION.

On the morning of 28th March, 1862, was called to see J. C. of the 18th Regt. Ill. Vols., American, farmer, aged 22 years, of rather short stature, but stout, and usually very healthy. I found him laboring under an attack, as I thought, of remittent fever, presenting the ordinary symptoms, with nothing to indicate that it was of a severe grade or an unusual type. I found the face flushed, the eyes partially suffused, pupils natural, tongue soft and moist—with only a light coat, the pulse 100, full, and of ordinary strength.

The bowels were somewhat relaxed, and complaint was made of pain in the head and bones; was informed he had some fever during the previous day, which had subsided in the night. His prescription was, pulv. Dover, hydrarg. cum creta, aa grs. xxx, M., divide in five parts; one to be taken every two hours, with mucilage of gum arabic, until the subsidence of the fever, when he was to have: quinine grs. xx; Dover grs. xv; pulv. capsic. grs. v, divided into five equal parts, and taken in the same manner as the former. Next morning, found him apparently considerably better; but still complaining of pain in the head and bones. Fever had not entirely subsided, but was much lower, and I gave the nurse directions to give the tonic at once, so that he should get the twenty grains of quinine within the next ten hours. This, as I subsequently learned, was done, his fever not rising so high as on the day previous. I heard no more of the case until 7 o'clock A.M., the following day (March 30th), when I was sent for in haste to visit my patient. I found him insensible, lying on his back, with flushed

face, dilated pupils, strong pulse—but not more than 80 to the minute, and upon raising his head found tonic spasm of the muscles of the back, amounting to slight opisthotonus. The hands and feet were warm, the skin on the extremities full, and the circulation to all appearance good. The breathing was a little slower than natural and stridulous: expiration being well performed, but inspiration accompanied by a sound similar to that heard in pertussis.

I immediately made a copious application of cold water to the head and neck; sinapisms to the abdomen, wrists, and ankles; and let fall two drops of ol. tiglii upon the tongue. Before we had completed these operations, I noticed that inspiration became more difficult, and the heart became much exerted. In a few minutes more the face assumed a purple hue; bloody foam in large quantities burst from the lips; and the man expired within a half hour of the time of my arrival. The great amount of blood which flowed from the mouth strongly suggested a broken vessel in the lungs: how this was I cannot say. The face was full of blood, and the entire body quite warm immediately after death. I should mention that a few minutes before death, the action of the heart was so strong and tumultuous as to be very plainly visible to the eye, and to shake the patient's entire body.

Upon inquiry, I learned that he had said, early in the morning, that he felt much better, and wanted some breakfast cooked and brought to him. He then got up, went out of the tent, stayed a few minutes, came back and lay down again on his bed. When his breakfast was brought, he said he felt worse, and would not eat. About 15 minutes afterward, I was called and found him in the condition described, which was so suddenly fatal. Now, I have taken the liberty to call this a case of congestion of the brain; and believe it to have been produced by miasmatic influence; but as to the precise pathological condition, I must own I am at fault. It is much to be regretted that unavoidable circumstances prevented a post mortem. But such being the case, let me enquire: What injury to the brain or spinal cord would produce such a defect in the respiratory ap-

paratus? Sudden dropsy of the arachnoid, produced by paralysis of that membrane, has been suggested to me; but I cannot yet see my way clearly through the case upon that hypothesis, and so beg leave to sit back and object, until further explanation is made. I should be very much obliged to the Editor of the EXAMINER (or any other medical man of large experience,) for a minute statement of the inferred pathology of this case, and suggestions in the way of treatment. Such an exposition would be of very great interest to me, and perhaps to others, as I am informed that the case is isolated from others of a similar nature *only* by extraordinary severity.

O. B. ORMSBY, Assistant-Surgeon,
18th Regt. Ill. Volunteers.

The case thus fully described, undoubtedly belongs to that variety of *malarious* fevers variously designated by writers as *Congestive*, *Pernicious*, and *Malignant*. From an intimation in the above letter, we infer that attacks of the same variety, though less rapidly fatal, have been somewhat frequent among the volunteers on the Tennessee River, during the month of March. If we remember that the weather there, during that month, was much warmer than here, equally wet, and the soil highly favorable for the development of malaria, we shall have no difficulty in accounting for the prevalence of such cases, so far as they may depend on the presence of malaria. The following letter from Dr. NEYMAN, referring to another and distant section of the country, and giving a brief but interesting account of the symptoms of the same variety of fever, is of much interest in this connection. The writer calls it a "dreadful malady," prevailing at the date of his letter, May 16, 1862, but we regret that he does not tell us how *early* the first cases occurred. The letter is as follows:—

CEDAR BLUFFS, IOWA, *May* 16, 1862.

DEAR DOCTOR:—There is at present a dreadful malady prevailing in and about the Grinnell in this State, which has resisted the best directed efforts of our physicians. It has been noticed quite extensively in our newspaper literature, but I do

not remember of seeing anything in the journals. I have not had an opportunity of investigating it fully; therefore, what I may say will be premature and unsatisfactory, and far from authoritative. I have conversed with several very intelligent physicians, whose opportunities for observation have been ample, and from what I have ascertained from them, and by personal observations, I have come to the following:—

Symptoms.—The premonatory symptoms which furnish an invariable indication of its approach are: for two or three evenings before the final paroxysm, the patient feels chilly; draws his coat tightly around him; draws near the fire, if there exists any. He thinks nothing of this, attributing it to a change in the atmosphere. Coincident with this are dull aching pains in the bones; lassitude; non-inclination to change positions; languor; &c. The final paroxysm—which almost invariably occurs in the evening, and almost as certainly proves fatal—consists of complete collapse; cold extremities, with but little chilliness; great apathy; recklessness of life; comatose; replies with difficulty to questions, and then sluggishly, relapses immediately into comatose condition. In fact, all the symptoms usual in what is known as congestion or "sinking" chill, only in a magnified degree.

Treatment.—If the premonitions are heeded, or the patient can be safely guided through the first *chill*, brandy and quinine proves as infallible a remedy as quinine for our ordinary intermittent fever, or sulphur for the scabies.

Cause, Miasma.—Our country had been flooded by rains and melted snow until our soil was completely saturated; the hot days coming dried up our land so suddenly that the previous mud became a resisting impervious crust. Is the disease anything else but an unusually malignant form of the *Congestive Chills?*

This account has been drawn up hastily. I thought it might possess some interest to you. I remain yours, respectfully,

E. H. NEYMAN.

The months of March and April, in this city and vicinity,

were unusually cold and wet; and attacks of pneumonia and pleurisy were more frequent than in ordinary seasons.

Many of the cases of pneumonia were accompanied by plain indications of a malarious influence, while others speedily assumed a strongly typhoid character. During the latter part of February, several thousand prisoners were sent from Fort Donelson to Camp Douglas, located on the Southern margin of this city. Many of these were speedily attacked with pneumonia of a very severe grade. During all the month of March, the grounds of the camp continued very wet and the weather cold. It was not until the middle of April that the soil began to be comfortably dry and some of the days warm. From the middle of April to the 10th of May, pneumonia has been less frequent, both in the city and the camp; but both have furnished several cases of severe and rapidly fatal *pernicious fever* or "congestive chills." One of the physicians to the camp informed me, that during one week not less than ten or twelve cases of this disease occurred among the prisoners, and a large majority of them terminated fatally during the first or second paroxysm. About the same period of time, several cases of this variety of fever occurred in different parts of the city, but without any direct connection with the camp. And cases have continued to occur in the city, though few in number, until the present time. Most of the cases presented symptoms strictly corresponding with those detailed in the books, and briefly stated by Dr. NEYMAN; and yet there were some deviations of a striking and interesting character. For instance, among the first cases that came under my care, was that of Mr. M. a native of Ireland, living in the extreme South part of the city. He was naturally strong and healthy, but somewhat addicted to the use of alcoholic stimulants. When first called to see him, he was suffering from a peculiar and severe pain across the abdomen of a paroxysmal character, and steady pains in the back and limbs. He had been complaining three or four days, and on careful inquiry, I was so well satisfied that the disease was of malarious origin, that I at once prescribed powders, each containing sulphate of quinia, three grains; sulphate of mor-

phia, one-third of a grain; calomel, two grains; to be given every two hours, until the abdominal pains were relieved, and subsequently every four hours, until six doses had been taken. The patient was speedily relieved, and for two or three days continued so much better that he called at my office,—full two miles from his residence. About the fourth day, he was seized with such violent and excruciating pains in the middle of the thighs, that I was again called for. I saw him in the evening, and in addition to the peculiar and indiscribable pain in both thighs, his whole cutaneous surface was cool, congested, dingy in color; the face pinched and haggard; the mind listless,—though restless and almost constantly changing position; and the pulse very small, weak, and frequent. Indeed, I was very forcibly struck with the resemblance of the symptoms to those resulting from the shock of a severe mechanical injury, as the crushing of a limb under the wheel of a railroad car. Yet he was in a sitting posture and appeared entirely rational. The remedies prescribed appeared to exert no influence whatever. The pulse grew weaker until it could no longer be felt, and the skin more livid and cold until death, which took place before morning.

Another case, which occurred only a few days since, was that of a very poor Irish woman, in the South-west part of the city. She had been complaining of feeling unwell and chilly for two days previous to any severe symptoms. Then a more decided chill occurred, accompanied by a great sense of exhaustion, lasting two or three hours. A partial reaction took place, accompanied by vomiting and purging, partly produced, no doubt, by some infusion of senna, given without any medical advice. It was after this had been going on nearly 18 hours, that I was called to see her. Found her with a very sunken and haggard expression of countenance; livid surface; cool extremities; pulse small, weak, and 140 per minute; mouth dry; constant thirst, but prompt vomiting of whatever was taken into the stomach; also frequent reddish serous discharges from the bowels, and an almost constant and severe pain in the umbilical region. The mind was listless and dull but entirely rational. I directed

mustard sinapisms to the epigastrium and spine, and small but frequently repeated doses of morphine and soda, to arrest the vomiting and diarrhœa. Regarding the attack, however, as a case of irregular intermittent, aggravated by an injudicious use of a senna purge, I also prescribed a powder consisting of sulphate of quinine, 3 grs.; pulv. opium, 1 gr.; calomel 1 gr.; to be given every three hours. The next day, I found the patient remarkably improved. The abdominal pain, vomiting, and diarrhœa had entirely ceased, and the patient thought herself almost well. The color of the skin was not good, and the pulse remained soft and weak.

I warned the attendants that there was great danger of a renewal of dangerous symptoms during the next twenty-four hours, and enjoined the faithful exhibition of efficient antiperiodic doses of quinine, with nourishment for at least two days longer. Owing to stupidity and ignorance, these directions were not faithfully carried out, and about noon of the following day, I was again urgently requested to see her. About two hours elapsed before I could answer the call, and I then found her in the last struggles of death. On making inquiry, I learned that she had remained quite comfortable until about 10 o'clock A.M., when she was seized with a most excruciating pain in the middle of one thigh. This was directly followed by all the symptoms of extreme prostration, and death followed in about five hours. It will be seen that in both these cases the fatal paroxysm was ushered in by an anomalous and severe pain in the middle of the thighs. In another case, the attack was commenced by a violent pleuritic pain in the lower part of one side, followed by a rapid failure of respiration and death. In all the other cases coming under my observation, the symptoms were substantially the same as those described by Dr. NEYMAN.

The occurrence of cases of *pernicious* fever of the malarious type, during the months of March and April, in the interior of Tennessee, Iowa, and this city, would seem to indicate some general tendency to malarious fevers of a more malignant type than ordinary. Though the cases have not been very numerous in any one locality, yet occurring early in the season, the ques-

tion arises whether they do not indicate a more extensive prevalence of the same class of fevers during the coming summer and autumn. That the case related by Dr. ORMSBY, and those alluded to by Dr. NEYMAN, as well as those which have occurred in this city, are genuine cases of *pernicious* fever or "sinking chills," I have no doubt. All those occurring in this city, and those in the army on the Tennessee River, were exposed to malaria or the ordinary cause of periodical fever, together with some of the more efficient causes of fever of a typhus type. To make my own views of the essential pathology of these highly dangerous cases understood, it is necessary to premise, that all the organized tissues of the human body are endowed with two elementary properties, viz.: *Susceptibility*, or a capacity to be acted upon or to receive impressions; and *vital affinity*, or that power by which the organic atoms of every structure are made to assume a certain relation to each other, and to attract from the blood some ingredients and reject others. These elementary properties are capable of being increased or diminished by various exterior influences. Some of these influences excite or exalt both these properties, disturbing in the same direction all the functions of the system, and causing what the old writers termed sthenic or synochal fever, and the moderns simple irritative or inflammatory fever. Other influences depress both properties, of course carrying the functions of the system in the same direction, and producing the typhus class of febrile diseases. Still another class of agents of a more specific character, are capable of increasing one of these properties while it diminishes the other, producing general disturbance or febrile phenomena of a peculiar and specific character, such as we see in the periodical and eruptive classes of fevers.

The primary action of malaria or the efficient cause of periodical fever, is such as to exalt the *susceptability* and diminish the *vital affinity* of the whole system. This is the first link in the chain of morbid action, from which arise the functional derangements and changes in the composition of the blood, that so constantly mark the progress of this class of diseases. If the cause acts with moderate intensity and uncomplicated with

other causes, the result will be the production of *simple* intermittents. If the malaria acts in conjunction with other causes of such a nature as to determine a higher grade of excitement, the resulting fever will be of that variety which has been styled by Dr. DRAKE, inflammatory intermittents and remittents. On the other hand, if the circumstances of the season, locality, or individual are such as to give the malaria a more energetic effect on the vital affinity of the tissues, it may speedily so far suspend that affinity as to greatly retard all the organic or molecular changes in the tissues, suspending the production of animal heat, arresting secretion, impairing capillary circulation, and in an hour, so far enfeebling both circulation and respiration as to endanger an immediately fatal result.

But the circumstances co-operating with the action of the malaria may be such as to dangerously retard the vital affinity in only one organ or tissue, instead of the whole composing the body. Thus, in the case related by Dr. ORMSBY, the suspension of vital action or affinity took place in the brain and medulla oblongata, suspending mental functions and respiratory movements to a great extent, while the heart depending for nerve force on the ganglionic centres continued to act vigorously. This disparity between the respiratory and cardiac functions, doubtless led to the rapid apoplectic engorgement of the pulmonary tissue, and sanguineous effusion into the bronchial tubes furnishing the bloody mucus, that flowed so abundantly from the air passages at the time of death. If pernicious fever consists, as we have supposed, in a primary lesion of the elementary properties of one or all of the tissues, it is easy to see why quinine, which when given in doses of from three to five grains, powerfully increases vital affinity while it directly diminishes morbid susceptibility, proves an efficient and almost certain remedy if given in the formative stage, or before the patient is too deeply sunk in the fatal paroxysm. For these cases it should be given in full doses, and if combined with any other stimulant, we should prefer strong coffee, cayenne pepper, or camphor, to the brandy mentioned by Dr. NEYMAN. But the great difficulty in the treatment of these cases is, in the manage-

ment of the paroxysm itself—in restoring sufficient play of vital affinity to enable the tissues to respond to the action of quinine or anything else. In a strongly marked case recently under my care, the paroxysm was broken and reaction was established under the use of the following:—

℞—Sulph. Quinine, ...30 grs.
Aromat. Sulph. Acid,.....℥jj,
Water,.....℥jj. Mixed.

I gave a teaspoonful in a tablespoonful of strong coffee every half-hour. Between each of these doses I gave a fluid drachm of a saturated solution of chlorate of potassa. Mustard sinapisms were also placed over the spine. After reaction was established, full anti-periodic doses of quinine, with two or three alterative doses of calomel, were given every three hours, until the patient was safe from a renewal of the paroxysm. If vomiting or diarrhœa existed, I would add to the above solution of quinine a small proportion of sulphate of morphia. The only additional remedy for establishing reaction in these dreaded paroxysms, in the efficacy of which we have any confidence, is the thorough application of the cold douche, followed by dry friction, or what is better—the alternate application of the cold wet sheet and the warm and dry blanket. But we have no space to pursue the subject further.

Uterine Hemorrhage.—Dr. H. Wanzer, of this city, sends us an account of a case of Uterine Hemorrhage, occurring in a lady at the 4th month of her term of nursing, and asks whether it was "an attempt of nature to re-establish the menstrual flow, or was it a case of early pregnancy?" From the fact that the hemorrhage came on gradually; was unaccompanied by either uterine pains or abdominal tenderness; continued without being apparently much influenced by internal remedies, about the usual time of the monthly flow, and then ceased under the influence of the tinct. ferri murias, we should regard it as a case of menorrhagia.

New York Ophthalmic Hospital.—The Directors of the

above Institution having leased the spacious old mansion of Peter Cooper, Esq., at the corner of Fourth Ave. and 28th St., removed their Hospital to the above place, on the 1st inst. The location is a central one, being near the terminus of the Northern and Eastern Railways, and convenient to the poor from all parts of the city, besides being in the vicinity of the Medical Colleges, giving Students of Medicine an opportunity to witness operations and to attend the Ophthalmic cliniques at the Hospital. The attending Surgeons are Drs. Mark Stephenson, John P. Garrish, and Marcus P. Stephenson.

Consulting Surgeon, Professor Valentine Mott, M.D.

The building has been thoroughly repaired for the accommodation of patients. The price of board is $3,50 per week. Advice and medicine to the poor from all parts of the United States gratuitously given. That distinguished philanthropist of New York, Peter Cooper, is President of the Association. Over 10,000 patients have been attended since its organization in 1852.

General Literature and Art.—The Eclectic Magazine of Foreign Literature. W. H. Bidwell, editor and publisher. Published at No. 5 Beekman Street, New York.

The June number of this most excellent monthly of foreign literature is just received. In addition to the full complement of instructive, important, and entertaining matter usually found in this magazine, it contains a beautifully engraved portrait of His Royal Highness, Prince Albert, the late Prince Consort of Queen Victoria.

"Illinois Farmer," and "Prairie Farmer."—We receive regularly and promptly both these interesting and valuable agricultural Journals. The first is published in Springfield, Ill., and the second in this city. They certainly deserve a very wide circulation throughout the great agricultural community of the North-west.

THE PLACENTA,

THE ORGANIC NERVOUS SYSTEM, THE BLOOD, THE OXYGEN, AND THE ANIMAL NERVOUS SYSTEM, PHYSIOLOGICALLY EXAMINED.

BY JOHN O'REILLY, M.D., F.R.C.S.I.

S. S. & W. WOOD, 389 Broadway, New York.
JNO. CHURCHILL, New Burlington St., London.

EXTRACTS FROM NOTICES.

"Dr. O'Reilly is evidently an enthusiastic student in whatever department of medical science he directs his inquiries. He chooses by preference the most abstruse subjects, and brings to their investigation experimentation, observation, and ratiocination. To give the various questions which the author has brought forward, and subjected to critical analysis, a complete examination, would be a task for which we have neither time nor space. Nor would such review profit the reader who has access to Dr. O'Reilly's work. It embraces a mass of propositions, experiments, and conclusions, which no one can properly appreciate without carefully perusing the work itself. The author has done a good service by giving to his various publications this permanent form."—*Medical Times, (New York.)*

"We would, therefore, ask for the work of Dr. O'Reilly a favorable reception; not because its author can be said to have been successful in the establishment of the doctrines advanced by him in relation to life and nerve-action, but because of our belief that a study of the treatise will be calculated to open a wide field of inquiry, the proper cultivation of which is destined to yield valuable fruit.

"In the volume before us will be found a fund of materials for thought, the accumulation of which has evidently cost its author no trifling amount of research; and, likewise, a series of inductions which cannot fail to arrest the attention of the reader, and incite in him a desire to investigate the premises upon which they are predicated, with the view to test their validity.

"It is true that there is scarcely a page of it which does not present some startling proposition; all of which may, possibly, turn out, in the end, to be truths."—*American Journal of Medical Science, (Philadelphia.)*

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"The subjects treated of possess an absorbing interest and importance to the physiologist; and, although the propositions Dr. O'Reilly offers are startling in their novelty and boldness, he has presented such an array of facts and authorities, has evidently expended so vast an amount of research and thought, that they claim more than consideration—investigation; and the student in this domain cannot but thank him for the many interesting paths he has pioneered for further exploration. Every page is replete with some new view, some unlooked for grouping of recondite and apposite facts; and these analogies, so novel and yet so correct, in most cases, furnish him with the most interesting and—if true—the most momentous deductions and inferences."—*Chicago Medical Examiner, (Illinois.)*

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